

U. S. Naval Hospitals

Preliminary

Rough Notes
(un-Edited)

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NAVAL HOSPITALS

Introduction

The origin of hospitals is a subject of debate. Reference to and records of the existence of hospitals dates back almost as far as the written history of man. The heritage of the United States largely is oriented toward Europe, and therefore we tend to look toward England, France, Rome, and Greece for information about our beginnings. There is abundant evidence that a look toward Greek civilization is not far enough backward to satisfy our curiosity.

Anytime the claim is made that something happened for the first time, the number of people who will attempt to correct that claim will be directly proportional to the emphasis made in the original claim. The least debatable assumption that can be made is that some sort of hospital facilities have existed for approximately as long as man has lived in urban communities. It can be assumed that some sort of medical treatment facilities must have existed for as long as man has traveled extensively from one community to another. For this reason, it is logical to believe that hospitals had their origin as some sort of a resting place designed for and catering to travelers and strangers to a community. If this logic is accepted, it explains why the word "hospital" and the word "hotel" have a common origin.

The Latin word "hospitium" was a place where guests were received; related words are hospice, hospital, hotel, spital, and hostel. Modern English emphasizes the word "hospital," as a place for sick people, while the word "hotel" has become synonymous with "inn" as a place for travelers

or guests. The French use the term "hotel-dieu" to indicate the chief hospital of a town.

There is evidence from historic documents that indicates the existence of hospital facilities prior to Greek civilization. Among those with earlier claims are Egypt, Babylonia, Phoenicia, and India. Recent studies suggest the existence of some sort of hospital facilities in the western hemisphere particularly in the Inca empire, antedating the discovery of America by many centuries.

In Western Civilization, as oriented toward Europe, the history of medicine indicates the trinity of magic, religion and medicine. There is ample evidence that primitive man placed great dependence upon the abilities of magicians and sorcerers. As these magicians became more adept and successful in dispelling the ills, aches and pains of early man, they made fewer and fewer house calls. As a consequence, it is logical to assume these magicians may very well have begun to provide overnight lodgings for their patients.

The Parthenon

The Parthenon, chief temple of Athena, was erected by the Greeks in the Fifth Century B.C. on a hill in Athens known as the Acropolis. There is dispute as to the original purpose of the Parthenon, but probably no other intention existed but to provide a religious monument. There is evidence, however, that many Greeks considered visitation of the Parthenon to be beneficial in relieving their illnesses. Undoubtedly, many stayed overnight or even for days, but it appears that a committee on admissions discouraged the sojourn of the hopelessly ill, and as a consequence the recovery rate appears to be high.

Nestor

There is ample evidence that Nestorius, and particularly his followers in the Third Century A.D. and later, established a number of hospitals in what is now Asia Minor. These institutions were not exclusively hospitals but also served as institutions of learning. When Mohammed and the followers of Islam became supreme in this area they continued the good works of Nestorians.

Western civilization owes a debt of gratitude to the Arabs and Islamic people, who kept alive the Glory that was Greece. In the Seventh Century, when Islam became the predominant religion in the Near East, the Arabs did not persecute the scholars. Instead they permitted them to retain their religious persuasions even though they were contrary to the teachings of Mohammed. The Arabs enlisted the services of these learned Nestorians, and encouraged their migration to Baghdad. This great city, located at the lower end of the eastern portion of the Fertile Crescent became a center of learning, a distinction it held until far into the Renaissance.

The Islamic peoples overran and conquered most of the land around the eastern and southern shores of the Mediterranean Sea. They crossed the Straits of Gibraltar and occupied what is now Spain for more than 6 centuries. Even though they were warlike, they had the perspicacity to collect and preserve the knowledge of their ancestors. While Europe was stagnating in the dark ages, the Arabs were not only preserving learning but also adding to it. This is especially so in the area of medicine. The Arabs themselves produced many great physicians among whom were Averroes, Avicenna and Maimonides. Maimonides was a Jew but

he was in great favor among the ruling class, and produced many learned treatises during his lifetime.

During this time, prior to the discovery of America, the Arabs maintained a system of hospitals which would have done credit to more modern versions. In the meantime, St. Jerome, about 400 A.D. is credited as having founded the most important hospital in western Europe. This hospital was located at Fabiola in Italy. Its purpose, as St. Jerome said was: "To gather in the sick from the streets and to nurse the wretched sufferers wasted with poverty and disease."

After 400 A.D., and for the next 500 or 600 years, most of Europe was on a strictly agrarian economy. Some cities remained, principally in Italy, and in these places hospitals, of sorts, were maintained. In France, England and the remainder of Europe, however, there were few cities. In the absence of cities, there were few travelers, and consequently few hotels or inns. Most of the population were illiterate, and to a large extent, were dependent upon home remedies and family treatment for their aches and pains.

Near the end of the Eleventh Century (in 1096) there began a series of wars commonly referred to as the crusades. The first crusade, preached by Pope Innocent, was followed by 10 more extending until 1291. The general purpose of the crusades was to recover the Holy Land from the followers of Mohammed. The crusades are considered to have been holy wars and are so called from a cross worn as a badge by many of the crusaders. The net effect of the 11 crusades can be said to have been only an eye opener to the peoples in Europe who for 5 centuries had been out of step with progress. Owing to the necessity for undertaking travel over great distances, resting places had to be provided for the halt and sick. The

crusades were bloody and unknown thousands of men fell in battle. Survivors necessarily needed a haven for recuperation. Several groups, notably the Knights Templar and the Hospitalers, were responsible for versions of institutions we now call hospitals.

Perhaps the oldest existing hospital today is the Hotel Dieu, founded in Paris about 600 A.D. It is believed that the first separate military hospital erected by a Christian government was established in France about the same time. This one was provided under the influence of Ambrose Pare about 1575.

The British were not far behind. The naval hospital at Greenwich was established about the end of the 17th Century. This facility provided an asylum for aged and infirm seamen. Two other naval hospitals were maintained in England, one at Haslar, near Portsmouth, and the other at Plymouth. These hospitals antedated the American Revolution.

U.S. Naval Hospitals

It has long been accepted as fact that Norfolk Naval Hospital, Portsmouth, Va., was the first United States Naval Hospital. Probably, it wasn't even the first naval hospital facility in the Norfolk area.

It is likely the British provided some sort of hospital or infirmary facilities for their sick and injured seamen even before the establishment of the Greenwich hospital. Certainly they provided for the care of their people in American ports long before the Revolution. This would have been true particularly at the major ports on the Atlantic Coast. When we took charge, it is likely that whatever facilities were available were continued in use by our people.

Although our Navy never exceeded a total strength of more than 25 or 30 vessels of war during the Revolution, some sort of facilities had to be provided for the care of the sick and injured. Even though these facilities were crude, it is evident the Continental Congresses intended that our fighting men be given needed medical attention. Not only were surgeons and medical spaces provided for aboard ship, but also ashore.

It is difficult to establish a separation of what was Colony-sponsored and what was Continental-Congress sponsored. Actually, much of the Revolution was financed by and prosecuted under the direction of the individual Colonies.

The major ports of entry in the Colonies included Boston, Newport, New York, Philadelphia, Baltimore, Norfolk and Charleston. Of these, Philadelphia was the largest city until after 1800. Large numbers of British public and private vessels that visited these ports, in carrying on the profitable trade that was making Britain a dominant sea power. It is unquestionable that many seamen, from time to time required more extended medical treatment than could be provided aboard ship.

It is true that even the best hospitals of the 18th Century were little more than wretched shelters as compared to the existing facilities of the 20th Century. Even so, the chronically sick or severely injured men could not be cared for indefinitely aboard ship.

Old records indicate it was common practice for ships' captains of all nations, when away from home, to arrange for boarding and nursing care of their sick and injured men, with residents who lived near the waterfronts of ports visited. Many of these boarding houses or hotels were maintained by wives (or widows) of husbands, who were themselves, followers of the sea. It is not likely the nursing care and diet provided

in these boarding houses were at all times adequate. The probability is that most were generally pretty bad, particularly when long-term care was required.

The boarding arrangements, therefore, were generally unsatisfactory. In the busier ports, facilities had to be provided where goods could be stored to await shipment overseas. One of these storage facilities was located on Province Island at the mouth of the Schuylkill River, where it empties into the Delaware River at Philadelphia. Now part of the mainland, Province Island was occupied prior to the Revolution by warehouses and at least one building known as a "pest house."

The pest house was used as a naval hospital by the Pennsylvania "State" Navy, with Drs. Benjamin Rush and Samuel Duffield in attendance, from 1775 to 1777, before the British occupied the City. Dr. James Hutchinson was in charge of this facility from 1778 to 1782, after the British evacuation of Philadelphia^{*}. No documents are now readily available, but it is a reasonable assumption the British had previously made similar use of this facility for their sick and injured seamen.

In letters and other documents, dating from the Revolutionary Period, reference has been made to the treatment of patients in naval hospitals. Whether they were denominated hospitals or sick quarters is immaterial; they were maintained (though wretchedly) with public funds, and they offered at least some surcease from the aches and pains of seamen.

At the end of the Revolution, the Navy was disestablished. Even though the Constitution provided for a Navy, no public vessels were authorized until 1794 when Congress directed the construction of a small fleet to combat the harassment of the French. Naval affairs, such as they

* Letter from CAPT R. C. Holcomb, MC, to RADM A. Farrenholt, MC, dated 28 April 1935. BUMED official files.

were, were the responsibility of the War Department until 1798, when the Navy Department was established by an Act of Congress.

In this same year--1798--Congress provided for the deduction of 20¢ per month from the pay of officers and men of the Navy and the Marine Corps to bear the expense of medical treatment necessary for the lame and disabled. This treatment was to be provided not by naval hospitals, but by the Marine Hospital Service under the Treasury Department. Marine hospitals were located in several ports, primarily for the use of Merchant Marine sailors, and these sites included those at Boston, New York, Baltimore, Norfolk, and Pensacola.

This arrangement from the start, was totally unsatisfactory. Navy surgeons, of whom there were only a score or so, complained bitterly of the unsatisfactory treatment received by officers and men who were admitted to the Marine hospitals. Officers generally preferred to provide for themselves (and at their own expense) any needed medical attention. Enlisted men who were admitted to Marine hospitals, more often than not deserted as soon as they were physically able to do so.

In the first decade of the 19th century a system of Navy Yards was necessary and authorized. Several Navy surgeons, in preference to sending the sick and injured to Marine hospitals frequently established makeshift hospitals within these Navy Yards, often at their own expense, and these facilities, wretched as they, were most often preferred to the Marine hospitals. Many early records of this period, refer to naval hospitals, even though not often described. There is no doubt, that the facilities of ships tied up in port often were used as hospitals, in these Navy Yards.

In 1811, the Congress created the Naval Hospital Fund. Authorization was provided for several naval hospitals, the expense of which was largely to be borne by the fund created from the contributions of 20¢ per month, originally authorized by the 1798 law. After 1811, instead of paying this money to the Marine Hospital Fund, the Navy was to have administration of the Fund. To control the Naval Hospital Fund, the incumbent Secretaries of the Navy, War and Treasury Departments were appointed Commissioners of Naval Hospitals. These gentlemen were directed to procure suitable sites and construct necessary hospital facilities. This directive, the Commissioners were slow in carrying out.

The infant United States Navy was mainly deployed along the Atlantic Coast. As a consequence, the designated sites for the construction of naval hospitals were at Boston, New York, Philadelphia, Norfolk, and Pensacola. The internal organization and government of naval hospitals was to be the responsibility of Navy surgeons. The surgeon in charge was responsible for the care and treatment of the sick and for the discipline, cleanliness and economy of the institution which it was his duty to keep always in an efficient condition. It was to be the surgeon's responsibility to exact from his subordinates a proper obedience to orders and to the laws and regulations of the Navy. No changes, except in case of emergency could be made to the hospital buildings, furniture and grounds, such as destroying or removing trees or disturbing the soil around them. No bills for purchases or repairs could be contracted for without permission of the Navy Department.

The Surgeon was to be responsible to inspect all medicines, provisions and supplies that might be received, or cause them to be inspected by a subordinate assistant surgeon. The principal guide for surgeons in charge

was Navy Regulations, not superseded or clearly defined until the establishment of a Bureau of Medicine and Surgery in 1842. After the establishment of BUMED a book of instructions for medical officers (now Manual of the Medical Department) provided a reference for more detailed instructions as to the responsibilities of medical officers.

In one of the early editions of the book of instructions it was provided that a medical officer in addition to such professional duties as might be assigned him should perform the duty of "officer of the day" for 24 hours commencing at 10:00 a.m. The officer so assigned was required to make a tour of inspection through the wards, kitchen, mess and other rooms occupied by patients and employees upon going on duty and during the afternoon at a different hour daily and finally at night after the patients were in bed. A list of patients and employees who had received passes was required to be furnished to the officer of the day as early as practicable every morning, and all patients and others were required to report their return to him.

The officer of the day was required to keep a journal which he was also required to sign at the end of his tour of duty. In the journal was to be a brief record of the following points to be noted at the time of occurrence: the condition of the wards, kitchen, mess, smoking and other rooms at each inspection; the condition of the meals served, as to quality and quantity; the names and diseases of patients admitted, and places from which they were received; the names and number of days subsisted, the disposition of patients discharged and whether the necessary papers in each instance were correct and complete; the names and condition of patients and employees who had returned or had overstayed their leaves;

the confinement and discharge of offenders and a cause of punishment; the appointment and discharge of employees; the reporting and detachment of officers or their going upon and returning from leave; the record of inspection of all articles received; the objects and findings of all boards of survey; and finally, such other matters occurring in his tour of duty as it may be desirable to record.

Surgeon Edward Cutbush,^{*} in 1808, and Surgeon W.P.C. Barton,^{**} in 1814, published books, which in essence, made recommendations for the establishment and administration of a system of naval hospitals. All of the surgeons then in the Navy, were generally agreed upon and supporters of the principles contained in these recommendations.

The Hospital Fund was not considered to be sufficient to permit building of facilities until nearly 20 years after they were authorized. Land on which to build was acquired as early as 1821. The first real estate acquired for the purpose was in Washington, D.C., but here a hospital was not erected until after the Civil War. The next purchase was a plot at Chelsea, Mass., acquired in 1823. The sites in Philadelphia, New York, and Portsmouth, Va., were acquired between 1824 and 1827.

Actual construction of naval hospitals was begun at about the same time in two different locations: Philadelphia and Portsmouth, Va. In the meantime, treatment of patients was continued variously in facilities that were referred to as naval hospitals at Boston, New York, Philadelphia, Norfolk, Charleston, Pensacola and New Orleans.

* Observations on the Means of Preserving the Health of Soldiers and Sailors, and on the Duties of the Medical Department of the Army and Navy with Remarks on Hospitals and their Internal Arrangement. Philadelphia, Thomas Dobson, 1808.

** A Treatise Containing a Plan for the Internal Organization and Government of Marine Hospitals in the United States, Together with a Scheme for Amending and Systematizing the Medical Department of the Navy. Philadelphia, 1814.

During the existence of the U.S. Navy, the Medical Department has established and maintained more than 100 naval hospitals. This number does not include those field hospitals that have been set up to care for personnel during Marine Corps Expeditionary Force operations. Nor does it include an even greater number of dispensary-type facilities, many of which have been capable of functioning as hospitals, and, indeed, provided short-term infirmary care. Likewise not included are the thousands of sick-bay facilities in ships of the fleet. The description of naval hospital facilities in designated hospital ships is planned for a separate monograph.

In the pages that follow, arranged alphabetically, are descriptions of naval hospitals now existing or which have occupied permanent or semi-permanent buildings. Included are those facilities which have been located not only in the Continental United States but also on every other continent and on many islands. Some of these hospitals have existed only for relatively short periods of time to meet requirements during wars or other emergency conditions.

Each of the designated naval hospitals has a proud history of accomplishment whether in operation for a short or long time. The gratitude of the infinite number of patients who have been cared for in these facilities has been expressed orally and in writing again and again. The pride of proprietorship by those Medical Department people who have formed the staffs of these several hospitals has generally been no less than the gratitude of those for whom the services have been performed.

In essence, most of the naval hospitals have been general hospitals. Remarks made relative to some hospitals, on the following pages, frequently

apply to several or all others. Attempts have been made to define the distinctly unique character of each, and, indeed, each has been unique in many ways.

AIEA HEIGHTS, HAWAII

The Naval Hospital, Aiea Heights, was commissioned 11 Nov. 1942. The first Commanding Officer was Captain Joseph J. A. McMullen, MC, USN. There was no formal dedicatory address.

The Navy had a long considered the Hawaiian islands as an important line of defense. In 1929, the major portion of the United States Fleet was transferred to the west coast of the United States where it became known as the Pacific Fleet. Beginning in the early 1930's annual war games frequently included a simulated defense of the Hawaiian Islands. A Navy Yard and Naval Air Station at Pearl Harbor were among the greatly expanded Navy facilities there. By the late 1930's, it became obvious that the Naval Hospital, Pearl Harbor, was inadequate to provide required medical attention to the increasing numbers of Navy personnel.

In 1938, the Surgeon General, RADM P. S. Rossiter, MC, inspected proposed sites for a new naval hospital in the vicinity of Pearl Harbor. He approved a site some seven miles from Honolulu above the town of Aiea which overlooked the harbor containing the Navy Yard and Naval Air Station. On this site, Admiral Rossiter recommended the erection of a 400-bed hospital capable of expansion to 1,000 beds.

The Shore Development Board, although not opposed to the hospital, lacked funds for the beginning of construction. On 26 March 1940, a memorandum to SECNAV from RADM Ross T McIntire, MC, then Surgeon General, recommended the appropriation of \$3,375,000 in Fiscal Year 1941 for this construction. The fourth supplemental National Defense Appropriation Act of 1941 provided funds for the development of additional hospital facilities in the vicinity of Pearl Harbor. The actual site chosen was in Hallawa,

district of Ewa, and consisted of a tract of 222.142 acres. It was purchased from the D. F. Bishop estate for the sum of \$38,782.21 .

The architect of the Naval Hospital, Aiea Heights, was Mr. C. W. Dickey of Honolulu. Mr. Dickey in discussions with Mr. F. W. Southworth, architect of the Bureau of Yards and Docks, soon agreed on the plans. Construction was begun in the summer of 1941, with no great haste being demonstrated until 7 Dec. 1941 when the attack on Pearl Harbor provided the impetus necessary to give high priority to completion of the project.

In 1940, the Naval Hospital Pearl Harbor with a rated bed capacity of 178 had many times been overcrowded with as many as 250 patients. In 1941, the erection of H-type ward buildings, as a temporary expediency, raised the authorized bed capacity of the Naval Hospital, Pearl Harbor, to 506; by further overcrowding this hospital had an actual bed occupancy of 634 by 1 Nov. 1941. To partly alleviate this condition, Mobile Hospital No. 2, with a 300-bed capacity, was in the process of being set up at the time of the attack. Even though unfinished Mobile Hospital No. 2 immediately accepted patients, as did USS Solace, tied up at Pearl Harbor.

As construction of the new hospital on Aiea Heights progressed, it was decided that the buildings and facilities of the new hospital would be operated as a part of the old hospital at Pearl Harbor under a single commanding officer and two executive officers. Captain McMullen was the Commanding Officer of both hospitals.

The need for additional hospital beds in the Pearl Harbor area were to continue throughout the course of World War II. The buildings of Mobile Hospital No. 2 were combined with newly-erected temporary buildings to provide housing for additional beds. By May 1944, construction had been

completed so that a total of 5,000 beds were available in the combined facilities. The main or central group of hospital buildings consisted of 53 structures, the temporary buildings away from the central group numbered 31 and the old mobile unit had 298 making a total of 382 structures in the hospital facilities at its greatest expansion in 1945. At the end of the war, in 1946, the mobile hospital structures were removed, as were most of the others away from the main central group.

Bed Capacity. The highest total number of patients under treatment at any one time during World War II was 5,618. At war's end, the bed capacity was rapidly reduced to about 1,300 beds, of which about 550 were located in permanent buildings.

Plant and Grounds. The main group of hospital buildings were situated at an altitude of 600 ft. above sea level facing south. The permanent structures were of reinforced concrete, the central administration building being four stories high with two three-story ward buildings forming east and west wings. The ward buildings were connected with each other and with the administration building by corridors 16 ft. wide. Built-in canopies afforded shade to the building. To the rear of the administration building, the subsistence and operating building were extended to contain the galley and mess hall, operating suite and auditorium.

At war's end the hospital reservation provided living accommodations for six married officers in converted Dallas huts, ten married enlisted men in converted ward buildings, 93 bachelor officers, 128 nurses, 390 enlisted men and 56 civilian employees. At this time the plant account rated the value of buildings and improvements, equipment and material inventory at more than 10 million dollars. The annual maintenance and operating cost, in 1947, was approximately 2½ million dollars.

The location of the hospital afforded a commanding and magnificent panorama of Pearl Harbor and the adjoining island shores. Nearby was the impressive Army Tripler General Hospital. Diamond Head was visible some 10 miles away, at the foot of which could be seen the distinguished Royal Hawaiian Hotel.

On 18 August 1943, the Naval Hospital, Aiea Heights, and the Naval Hospital, Pearl Harbor, were separated under two commands. The official designation of the hospital at Aiea Heights became U.S. Naval Hospital, Navy No. 10, care of Fleet Post Office, San Francisco, California.

Among distinguished visitors who visited the hospital, in 1943, were Mrs. Franklin D. Roosevelt, ADM Ernest J. King, Commander in Chief, U.S. Fleet, Mr. Ralph Bard, Assistant Secretary of the Navy, Senators Richard B. Russell, of Georgia, Ralph O. Brewster, of Maine and Henry Cabot Lodge, of Massachusetts. Patients were entertained by many widely-known people in the sports and theater worlds including Mr. Joe Cronin, Boston Red Sox, Miss. Judith Anderson, Shakespearean actress, Gaylord Carter, Radio organist and many, many others.

The Hospital Hi-Lites was one of the better naval hospital newspapers in existence during World War II.

The greatest number of patients admitted in a single day was 1,169; these were admitted on 3 July 1944. Of these, 369 were admitted from USS RELIEF in a period of 65 minutes. The bulk of the 41,872 patients admitted in 1944, were further transferred to the mainland or returned to duty.

On 21 May 1944, several ships loaded with ammunition exploded in the harbor. Medical officers, hospital corpsmen, and ambulances were dispatched to the scene and transported patients back to the hospital. During that evening more than 250 patients were admitted, many requiring immediate surgical operation and treatment for shock; by midnight every patient had been cared for.

During the operation of the hospital many impressive ceremonies were conducted for the awarding of purple hearts and other combat decorations. At the first presentation, 1 January 1944, 632 officers and men from Tarawa were decorated--many, personally, by Admiral Nimitz.

During 1944 the hospital was visited by President Roosevelt, ADM W. G. Leahy, Admiral McIntire, Surgeon General, Dr. Frank Lahey, and other distinguished civilian physicians. Among the distinguished performers who entertained in the hospital, in 1944, were Jack Benny, Yehudi Menuhin, Eddie Peabody and Spencer Tracy.

At the beginning of 1944, the staff consisted of 54 physicians, 2 dentists, 161 nurses, 20 Hospital Corps officers, and 856 hospital corpsmen. By the end of 1944, these numbers had been increased to 74 physicians, and 22 interns, 9 dentists, 298 nurses, 18 Hospital Corps officers, and 1,076 hospital corpsmen. In addition, there was a SeaBee unit of 259 officers and men. The peak load of patients was reached on 31 March 1945; during that period 6,338 casualties from Iwo Jima and 2,662 from Okinawa were included. The first group of Hospital Corps Waves reported in January 1945. By October, there were 167 on board.

By the end of 1945, demobilization had begun. By July 1946, the last of the Waves had been returned to the mainland. Evacuation of patients to the mainland was largely by air but hospital ships and APA's were also used. There was never any serious delay encountered in the evacuation of patients owing to lack of transportation. During 1946, 12,439 patients were evacuated to the mainland. On 31 Dec. 1946 the patient census was 529. The staff had been reduced to 24 physicians, and 13 interns, 4 dentists, 46 nurses, 7 Hospital Corps officers, and 201 hospital corpsmen.

In May 1947, four wards were opened for the care of dependents and on 7 July the obstetrics ward was placed in service. By 31 December, there had been 395 live births recorded. In November, building No. 115 was occupied as a married enlisted quarters with 10 apartments occupied. By 31 December 1947, the patient load was down to 467. During 1948, all temporary buildings were declared surplus and were disposed of; the patient census remained relatively stable. The authorized bed capacity was reduced to 700, and the number of patients on board at the end of the year was 499.

It was decided late in 1948, in conformance with Joint Service utilization of facilities, to disestablish the Naval Hospital, Aiea Heights. This was done following receipt of this letter:

"BUMED-4112-MFD, NH57/AL-1 dated 28 February 1949

TO: The Secretary of the Navy

VIA: The Chief of Naval Operations

SUBJ: Disestablishment of U.S. Naval Hospital Aiea Heights, Hawaii, Oahu, T.H., recommendation for

Ref: (a) Report of the Committee on Medical and Hospital Services of the Armed Forces on Programs for Hospitalization of the Armed Forces and for Improvement of the Utilization of Existing Hospital Facilities.

(b) Secretary of Defense Memorandum to the Secretaries of the Army, Navy, and Air Force, re Programs for Hospitalization in the Armed Forces, dated 21 Feb. 1949.

1. Reference (a) was approved and the implementation of pertinent recommendations contained therein directed by Reference (b).
2. Reference (a) recommended the disestablishment and retention in a maintenance status of the U.S. Naval Hospital Aiea Heights and that hospitalization being provided by this hospital be accomplished in the Tripler General Hospital, Oahu, T.H. It is further recommended that, upon disestablishment of the Naval Hospital, Aiea Heights, utilization and occupation of the officers, nurses and medical enlisted personnel quarters be continued.
3. The Bureau has received information from the office of the Surgeon General of the Army that sufficient quarters for the Nurse Corps officers required to effect joint staffing exists at the Tripler General Hospital. No quarters are available at the Tripler General Hospital for male officers and enlisted personnel.
4. Arrangements are being made with the Medical Department of the Army for orderly transfer of patients from the Naval Hospital, Aiea Heights, to the Tripler General Hospital so that the care and treatment of Navy and Marine Corps patients may be continued without interruption. It has been mutually agreed that transfer of patients to Tripler General Hospital and assignment of personnel for joint staffing purposes shall

be completed by 1 June 1949.

5. It is recommended, therefore, that the Naval Hospital, Aiea Heights, be disestablished on 1 June 1949 and retained in a maintenance status.

6. It is further recommended that currently assigned officers quarters located in Buildings 273, 274, 275, 276, 252, and 253 bachelors' officers quarters Building 10; married enlisted quarters in buildings 115, 116, and 117 and Hospital Corps enlisted quarters in Building 8; be retained in active status in order to provide suitable quarters and accommodations for personnel to be assigned for joint staffing of the Tripler General Hospital. --BUMED Signed, C. A. Swanson."

The Commandant, 14th Naval District, issued a directive on 29 April 1949 discontinuing the admission of patients to the Naval Hospital, Aiea Heights, as of 0001, 1 May 1949, Navy and Marine Corps personnel requiring hospitalization to be admitted to the Army Tripler General Hospital. Captain Gordon B. Tayloe MC, USN, Executive Officer of the Aiea Heights Hospital was ordered to Tripler General Hospital on 30 April 1949 for duty as medical officer in charge of the Navy medical units. All patients in the Aiea Hospital not disposed of by normal attrition were transferred to Tripler General Hospital prior to the end of May. As of 31 May 1949 Aiea Heights naval hospital was disestablished and placed in maintenance status under a Commander, Medical Corps U.S. Navy, as medical officer in charge of disestablishment and maintenance.

ANNAPOLIS, MD.

The Naval Hospital, Annapolis, Md., exists primarily for the purpose of providing health care to the midshipmen at the Naval Academy.

Medical Department facilities have existed at the Naval Academy as long as the Academy has existed. The Naval Academy, first located within the Naval Asylum at Philadelphia, was established at Annapolis in 1845. The first structure to be used as a hospital here was a small four-room wooden building constructed in 1846. It was described as being located "on the plain (parade grounds) below the superintendent's house, near the old mulberry tree. The two rooms on the upper floor adjoining the bath occasionally were used for patients. On the lower floor there was a dispensary office and waiting room.¹"

The second hospital at Annapolis was a more imposing structure of three stories; it was built in 1855 in the vicinity of the present officers' club. It was first occupied on 25 November 1857, and was in use until 1871.

The third hospital was erected on the plateau overlooking the Severn River in the general vicinity of the present Perry Circle apartments. This hospital was occupied 1 August 1871. This hospital had a short life. It had been erected too near the swamps along the river and the incidence of malaria was so high among patients and staff that the hospital was closed in 1876. From 1876 until 1907, all Naval Academy patients requiring extended hospital care were transferred to the Naval Hospital, Washington, D.C.

The present hospital--the fourth--was approved for construction in 1901. Construction was not started until 1906; however, the main building and four wards were opened to patients for the first time in 1907. Two years later, in 1909, a nurses quarters, eight wards and three officers quarters were constructed.

Additional temporary wooden structures for use as wards were constructed during World War I. At the same time, a third floor was added to the nurses quarters and the entire building was remodeled. In 1924, three additional officers quarters were constructed.

The rated bed capacity of the hospital now is 333, including 20 beds in the dependent's addition. The present facilities can be expanded to a capacity of 421 beds.

The Naval Hospital, Annapolis, occupies a site about 22½ acres, situated along the crest of a hill overlooking the Severn River. The hospital buildings are constructed of brick, the central building being three stories high, flanked by two groups of two-story ward buildings on each side with new three-story additions on each of the west and east wings.

The subsistence building, hospital corpsmen quarters and nurses quarters are located to the rear of the main hospital building. Senior officer quarters face the Severn River, and these are constructed of brick. There are living accommodations for about 150 staff members.

In 1878, the Surgeon General, commenting on the hospital at Annapolis, suggested that existing buildings at the Academy afforded abundant space for quartering of the sick. He pointed out that only on the cases of epidemic disease would any greater hospital accommodation be necessary, and that the necessity could easily be met by the erection of temporary structures. The Surgeon General suggested that considerable expense in

caring for the buildings and grounds could be saved by disposing of the old building (the one built in 1871), which would serve the interest of government best. The proceeds from the sale of that building could be added to the Hospital Fund, resources of which he said are now strained to provide the hospitals actually needed.

The Surgeon General reported that the average patient load at the Academy was about 12. The total number of sick days for the year was recorded at 4,545. There were 1,002 admissions to the sick list, in 1878, so that the average patient stay was slightly more than 4 days.

In 1879, Medical Director Albert L. Gihon, the senior medical officer, reported 1,064 admissions for the year. He reported with pride that the mortality rate was exceptionally small owing to attention to sanitary conditions, despite the unfavorable climate at Annapolis. He further reported that there had been only 54 deaths at the Naval Academy from 1845 to 1879, 11 of which had been caused by accidents.

Dr. Gihon pointed out that many of the causes of disease in other communities did not exist at the Naval Academy. He suggested that the spacious apartments in the attached buildings, which were kept scrupulously clean and from and surrounding which every kind of refuse was promptly removed, contributed to this salutary condition. He described the buildings as being well lighted and heated and fronted on extensive wooded lawns. There was an abundant supply of pure water and good food and excellent facilities for bathing. A rigid quarantine was maintained against communicable diseases and acute infections coming under the cognizance of the medical officers in their incipency. Despite the medical officers' efforts, however,

a number of cases of typhoid fever had appeared since 1865; three of these were fatal, indicating a defective sewerage system. Dr. Gihon described the sewer system as being less than desirable and suggested this condition had contributed to the development of typhoid fever. In certain conditions of tide and wind, he said, the exposed outlets of sewers permitted the return of sewer gas into the dwellings sometimes recognizable by the smell, especially when the houses had been closed at night. He recommended a complete overhaul of the sewerage system to overcome this problem.

Dr. Gihon suggested that the use of steam caused most of the houses to be overheated and that proper attention was seldom paid to keeping the evaporating pans filled. He described a method of ventilating the rooms of the midshipmen's quarters in which he introduced a board 6 inches wide beneath the lower sashes of windows causing the upper end of the sash to overlap the bottom of the upper sash, leaving a space between them for the infiltration of cold air into the cadet's apartments above the heads of those sleeping there. This arrangement, Dr. Gihon said, had been so satisfactory that he had advised the system for general adoption in general offices and buildings.

Dr. Gihon recommended the substitution of latticed openings for solid doors in cadet's rooms to permit the equalization of the temperature of the rooms. This would provide better ventilation and an increase of air space by the addition of the area in corridors. An additional advantage of this arrangement, he pointed out, would be to make clandestine study by dim lights after hours and the habit of students in assembling late at night

for eating and drinking bouts, more difficult. He recommended that cadets who wished to study should be permitted to rise early for that purpose rather than studying after hours (i.e., 10 o'clock) in dim light. Dr. Gihon attributed this practice as contributing to a disastrous effect upon the eyesight of the cadets, in several instances. He noted that many cadets were in the habit of holding spreads or feeds of indigestible sweet meats, preserves, and nuts sent by parents and friends, which often were eaten at night after study hours. This practice invariably resulted in a large increase of a sick list after occasions of this sort, and, Dr. Gihon suggested, were responsible for much subsequent illness and deficiency in study.

Dr. Gihon recommended an absolute ban on the use of tobacco by cadets². He reported that he had urged upon the superintendent to be especially vigilant in this matter, stating that within his experience, beyond all other schools' requirements the future health and usefulness of the lads educated at the academy was dependent upon total abstention in the use of tobacco. He cited a recently published book by Professor Richard H. McSherry, President of the Baltimore Academy of Medicine, titled "Health and How to Promote It: "that tobacco is injurious to growing boys, especially to school boys, is a subject not open to discussion." Dr. Gihon contended that the regulations against the use of tobacco in any form cannot be too stringent. This opinion had been endorsed by successive annual Boards of Visitors, as a wise sanitary provision.

Dr. Gihon was an aggressive crusader against the evils of tobacco use. He appended to his report an extract of his recommendation to be presented to the Board of Visitors, for the year 1880:

"The foulness of some of the rooms occupied by the cadets, observed by the inspecting officer, upon his nightly visit and by the medical officers on occasions of sickness is largely due to the habit of smoking tolerated in the academy, and which I would respectfully recommend to be forbidden.

"In addition to the foulness to which it contributes and which I think accounts to some extent for the numerous headache, gastric disorders and vague trivial disturbances which enlarge our sick list, I believe the use of tobacco by the cadets induces difficulty of concentrating their minds upon study and defective muscular coordinative power. The Professor of Drawing informs me that he has observed among the smokers an impaired power of muscular control, which has retarded their progress and proficiency in his branch. I think most of the officers of this institution agree with me in regarding the use of tobacco by the cadets as injurious, and as being more in vogue than when it was forbidden by the regulations."

It appears that the use of tobacco had been banned some years earlier at the academy but that the ban had been rescinded.

Dr. Gihon described the use of tobacco as being pernicious, indefensible and a wholly unnecessary habit. In substantiation of his opinion, he cited a few physiological facts as evidence that his opinion was something more than mere opinion:

- 1) "The effect of tobacco on the minute vessels at the termination of the arterial circuit is to cause contraction of them is a primary fact, resulting in impaired nutrition, especially on the nerve centers;
- 2) By causing irregularity in the supply of blood, it degrades tissue;
- 3) There is no doubt that it predisposes to neuralgia, vertigo, indigestion and other affections of the nervous, circulatory and digestive organs; and
- 4) It lessens the natural appetite, more or less impairs digestion, and induces constipation; while it irritates the mouth and throat, rendering it habitually congested and destroying the purity of the voice. It induces an habitual sense of uneasiness and nervousness with epigastric sinking or tension, palpitation, hypochondriasis, neuralgia and frequent urination. Chewing and snuffing tend to cause gastralgia, but smoking, neuralgia of the fifth pair."

Dr. Gihon continued to cite authorities, including Wordsworth, Mackenzie, Hutchinson, Sichel, and Chisholm who demonstrated that continued use of tobacco excites the optic nerve and produces amaurosis. Chisholm had reported that he had treated 35 patients with amaurosis in the past few years directly traceable to the use of tobacco, by smoking, in every case but one.

Dr. Gihon subscribed to the belief that the use of tobacco renders the vision weak and uncertain, causing objects to appear nebulous or creates *muscae volitantes* and similar subjective phenomena. In numerous instances it has produced amaurosis. Similar arrangements of hearing with buzzing, ringing, etc., in the ears and even hallucinations of this sense. He went on to state that when the sight fails smokers and no appreciable change of structure can be found in the eye, tobacco poisoning may be assumed. The assumption is converted into certainty, he said, by the fact that appropriate remedies fail entirely while the habit of smoking is continued. In rare

cases the susceptibility is so great that the smoking of a single cigar a day will produce it.

Dr. Gihon stated that he had several times rejected candidates for admission into the academy on account of defective vision, those candidates having confessed to the premature use of tobacco--one from the age of seven. Dr. Gihon insisted that a defective muscular coordination was caused by the use of tobacco. This opinion was substantiated by Professor Oliver, head of the department of drawing, who claimed he could invariably recognize the user of tobacco by his tremulous hand in manipulating the pencil, and by his absolute inability to draw a clean, straight line.

Dr. Gihon had a number of colleagues who subscribed to his crusade against the use of tobacco. One of these, Dr. Magruder, medical examiner, said:

"The most prominent cause of rejection of candidates to the Academy has been from irritable heart, found most frequently in boys with abnormally-developed sexual organs, or who use tobacco to excess. In fact, I have met with no cases of this affection that could not be attributed to the use of tobacco or to masturbation. The latter vice itself is a consequence of sexual erethism, induced through its effects upon the nervous system by this narcotic, which smoked in the shape of cigarettes is a reputed aphrodisiac. The pernicious effect of tobacco on the generative function is authoratively asserted by Acton who declares, 'I am quite sure that excessive smokers, if very young, never acquire, and if older, rapidly lose their normal verile powers.'"

"The antidotal effect of tobacco makes drinking of stimulating liquors a natural consequence of smoking," said Dr. Gihon. The lad who is encouraged to smoke tobacco is peforce taught to drink rum and the ingenuity

he will exercise to gratify this implanted craving, despite regulations, will far exceed in persistence because impelled by the imperious demand of perverted function, that which he would primarily have exerted in conquering his natural repugnance for tobacco had it been an interdicted vice.

Many contemporary investigators supported Dr. Gihon's position on the use of alcohol and tobacco. Richardson claimed:

"Among those persons who are total abstainers from alcohol, few are found who can bear tobacco in the most moderate use of it. When we see a man smoking and drinking, quaffing off a cup of wine or of spirit to quiet the qualms which would otherwise be inflicted upon the fumes of the cigar or pipe, we really observe the fact of a most excellently thought innocently devised physiologically experiment upon a living animal. The man is unconsciously, unless he be a physiologist, inducing a balance a tension in his arterial circuit. In the end, the nutrition of the organic parts, which are under the influence of the same nervous regulation, is sure to suffer and in many organizations to suffer fatally and rapidly."

Druhan reported a youth of 14, who after smoking 15¢ worth of tobacco for toothache, fell down senseless and died the same day. Blatin reported a medical student, aged 23, who after smoking a single pipe, fell into a frightful state, the heart became motionless the chest was constricted, breathing was painful, the limbs were contracted, the pupils insensible, one contracted the other dilated, and these symptoms lasted four days.

Dr. Gihon was persistent; while it is indisputable, he said, that a large number of cadets have learned to smoke before their admission into the Academy, its compulsory inhibition during his academic career will be

of incalculable benefit to him as well as to all others who now unfortunately acquire the habit through the example of their classmates. It is almost impossible for the cadet, however young--and some enter at 14--to avoid contracting the habit if his roommate also indulges. This indulgence, one of the officers in charge said, makes some of the rooms so foul and offensive from tobacco smoke that it is unpleasant to enter.

"The medical officer of the day recently was called late at night to attend a cadet in a state of extreme prostration induced by tobacco, and although he was himself a smoker he declared the atmosphere of the room to be repulsively stifling from tobacco smoke.

Dr. Gihon said, "I have seen youths fresh from graduation from this school go on board ship, smoking rank, blackened pipes that would have nauseated many an adult. That this can be done without harm no physiologists will believe. That they should be permitted to acquire such a habit during school life no sanitarium would admit."

That so many adults use tobacco with apparent impunity or even admitted benefit is no argument in favor of its use by growing lads, in Dr. Gihon's opinion. While tobacco by arresting molecular waste of tissue in the mature man may help to maintain the integrity of the organism, in the adolescent this very effect is detrimental, since it retards that progressive cell change upon which the advanced development of the body depends. Dr. Richardson emphasizes the statement that "the young should especially avoid the habit. It gives a doubtful pleasure for a certain penalty. Less destructive than alcohol, it induces various nerve changes some of which pass into organic modifications of the function." Aside from this effect on the nutrition the adult smoker must be conscious that tobacco is not an aid but an obstacle

to mental application.

It was reported in the Ecole Polytechnique, a French publication, "a comparison made between smokers and nonsmokers showed that the nonsmokers took the highest rank in every grade and further that the smokers continuously lost grade and, in 1861, the minister of public instruction of France accordingly issued a circular forbidding the use of tobacco by pupils in the public schools."

"The user of tobacco is incapable of concentrated mental effort, as was demonstrated by the fact told me by a number of the academic board," said Dr. Gihon, "that cadets have complained of their inability to apply themselves to study and obtain a class standing they desired on account of the excessive smoking in their rooms, in which they were compelled to indulge."

The National Dispensatory, in 1879, described the cerebral effects of the habitual use of tobacco:

"Often there is a feeling of a rush of blood to the head, with vertigo and impairment of attention so as to prevent continuous mental effort; the mind is also apt to be filled with crude and groundless fancies, leading to self distrust and melancholy. The sleep is frequently restless and disturbed by distressing dreams. It impairs muscular power and coordination, probably both, by interfering with nutrition and by exhausting nervous force and usually keeps down the growth of muscle and the deposit of fat. Doubtless there are many persons who use tobacco in one or more forms who experience few or none of these evils, and whose constitution seem to be proof against its mischievous effects; but to the greater number, the habitual use of it is more injurious than useful

and it acts upon a certain number in almost all doses as a poison."

Dr. Gihon concluded his report by saying, "An agent that has mischievously been represented to be innocuous only because of the remarkable tolerance exhibited by a few individuals and is actually capable of such potent evil; which through its sedative effect on the circulation, creates a thirst for alcoholic stimulation; which by its depressing and disturbing effect upon the nervous centers, increases sexual propensities and induces secret practices while permanently imperiling viril power; which determines functional disease of the heart; which impairs vision, blunts the memory and interferes with mental effort and application, ought, in my opinion as a sanitary officer, at whatever cost of vigilance, to be rigorously interdicted. It is undoubtedly true that many will be impelled by their desire for this indulgence to gratify themselves and resort to injurious and dishonorable means to evade the regulations against smoking, but equal ingenuity and want of principle are shown by the youth in his desire to obtain liberty and licensed in evading the regulations against "frenching," and by him who through negligence, incapacity, or other cause, is deficient in class standings in evading the regulations against "gouging" and by him who seeks to bully the plebe in evading the regulations against hazing, but the difficulty in restraining smoking should be no more valid excuse for its tolerance in the face of sanitary objections of such magnitude, than for the toleration of frenching or gouging or hazing. The use of stimulating liquors is forbidden, but that regulation prohibiting it is evaded is shown by the empty whiskey bottles which are picked up outside the cadets' quarters. It is not proposed to allow drinking on this account, although as a sanitary fact a half pint of table claret or of beer would be a wiser indulgence than

the cigar or the innumerable cigarettes, which latter, there is good reason to believe, cause more injury to the health from other agents than the mere tobacco which they contain." Dr. Gihon stated that he felt assured that he could do no other act of greater good to this school, in the success of which he had a profound interest, than in succeeding in saving pupils from the impairment of health sure to result from the unrestrained premature use of tobacco.

Medical Inspector A. C. Gorgas, the senior medical officer at the Navay Academy in 1880, reported that year as being freer of admissions to the sick list than the previous year. Only 934 were admitted. Dr. Gorgas pointed out that the winter of 1880-81 was extremely mild but he suggested that this fact showed ill-founded the popular idea that warm, snowless and iceless winters are unwholesome, and that "a green Christmas makes a fat church yard." Dr. Gorgas continued the crusade against the use of tobacco by cadets, repeating most of the observations recorded by his predecessor, Dr. Gihon. He noted that no extensive modifications had been made on the sewerage system and that foul odors remained. Dr. Gorgas noted that colored people, including the purest blacks, enjoy no immunity from the malarial fevers of the region. On the contrary, he reported, the greatest numbers of cases of these fevers occurred in the town among Negroes who came here from more miasmatic districts in the neighborhood. Dr. Gorgas also noted that the incidence of malarial fevers had decreased in recent years and ascribed this happy circumstance to the fact that drainage of surrounding swamps had been accomplished.

Dr. Gorgas also noted and expressed an opinion that many previously diagnosed malarial infections were more than likely typhoid fever. He, however, did not suggest that malarial fever had been entirely eliminated.

He suggested there was not a single case of original malarial fever after he had spread some 1,500 bushels of gashouse lime over the grass adjacent the hospital grounds. Dr. Gorgas recommended the continued emphasis on drainage of low lands and filling these areas with oyster shells, a cheap commodity in the area.

In 1881, Dr. Gorgas described a typical case of cardiac disturbance induced by excessive smoking. The patient was found to have an irregular and frequent pulse, 100 to 120, the least exertion sending it up to the latter figure or higher. Drills, exercises at the gymnasium and field sports were interdicted with no benefit. Upon inquiry it was found that he was an excessive smoker. As he was naturally somewhat anxious about his troubles, he consented at once to leave off his tobacco for a week, upon my advising him to do so. At the end of the week, his pulse was regular and 76 and exercise produced no abnormal palpitation. He returned to his athletics, trained for the tournament in which he took a distinguished part and had no further trouble. Since the beginning of this academic year, the Sunday morning inspections contrast most pleasantly with those of last year. The bedrooms are no longer flavored with nicotine; the books, papers, bedding and clothing has ceased to reek with tobacco smoke; pipes, cigars and tobacco, the former ornaments of tables and mantle shelves, have disappeared. This contrast is infinitely greater at night, when, as I stated in last year's report, the atmosphere was then intolerably foul to anyone entering from fresh air. The transgressors of the anti-tobacco order give no more trouble to the authorities and are as easily dealt with and controlled as the smugglers of spirits the French-leave takers and other regulation breakers. Dr. Gorgas reported improvements made in the drains in the sewage system but recommended further improvements. More than 1,000

admissions to the sick list were reported for the year.

For the next several years, the number of admissions to the sick list at the Naval Academy remained in the vicinity of 1,000. No remarkable medical circumstances were reported until 1888, when Medical Inspector T. C. Walton reported additional improvements to the sewage system, but even those improvements left something to be desired. Dr. Walton was particularly concerned with head and latrine facilities most of which were located outside the quarters of the cadets.

During the years 1885, 1886, and 1887, sore throat of a diphtheric nature was prevalent in the city of Annapolis and at the Naval Academy. This epidemic was particularly severe in the early winter months of 1886 when more than 50 deaths occurred. Only one patient developed the disease within the academy walls. This was not fatal. Moderately strict quarantine within the Academy probably contributed to the low morbidity incidence.

By 1893 no action had been taken on the recommendation to improve the water closets for cadets and marines. The water closets were described as insufficient in number, they smelled, they were badly ventilated and the main sewer needed an extension that it may empty into deep water. In this year, the medical officer recommended that the system of lighting should be changed as soon as practicable. He pointed out that during the past 40 years there had been 110 admissions to the sick list for eye troubles and 290 from headaches. The total number of sick days from those causes during the period was 1,200. It was his opinion that no inconsiderable portion of this loss in man days had arisen from working in rooms improperly lighted and containing overheated air; this situation was vitiated by gas consumption

and it was strongly recommended that a system of electric lighting be installed.

Dr. Walton, in 1893, noted there were 27 admissions to the sick list for injuries received by cadets while playing football and, in addition, from the same cause, were 110 excuses from drills. Dr. Walton did not view these admissions with alarm and pointed out that all the injuries were followed by speedy recovery. He noted that no particular progress had been made on previous recommendations for improvement of the sewer system and the addition of water closets in the cadet barracks; some improvements had been made in the living quarters, however. He reported that no progress had been made on previous recommendation to install electric lighting. He attributed many admissions and sick days for eye infections as being related to the poor lighting system.

Dr. Walton, in 1895, had second thoughts about the game of football. He reported in 1894, that there were 22 admissions to the sick list involving 105 sick days and 120 excuses from drills on account of injuries received during the game of football--three for fractured bones--the rest, for sprains, contusions etc., of varying severity. As a result of his concern he addressed this letter to the superintendent:

"I have the honor to direct your attention to the game of football played at this Academy. About 60 cadets take part in the game, either as principals or substitutes; all of them play more or less in the practice games; 35 under special training. Since the beginning of the present academic year, 54 cadets have been injured by football so severely as to require their being placed on the sick or excused list. Of this number, two were cases

of fractured clavical, one of the radius and one of the nasal bones. Already there have been 87 days on the sick list for football injuries and upward of 100 days on the excused list; and the end is not yet, as a severe fracture of the clavical occurred only 2 days ago. A number of injuries that have not been brought to the attention of medical officers required only trivial attention which we have no record of. Neither have we full knowledge of remote injuries or injurious consequences. There is one prominent player on this year's team who had his physical examination last spring and was found to have a irritable and overactive heart with evidence of its enlargement. He was cautioned about it at the time and advised to avoid undue excitement or exertion such as he had often been subjected to in the game of football. For a time this season he was an onlooker but the stress from his comrades and other football advocates, together with his own desire, has put him in the field again, where he now an an active player, with what effect on his heart I know not but it can only be an injurious one.

I have watched the game of football closely in all respects for several years, latterly in the hope that the modifications of the play would make it less harmful. I am convinced that its injurious effects, only some of which have been eluded to, far outweigh any benefits that may be derived from the game. I would recommend the game of football be prohibited at the Academy and that other less harmful athletic sports be more generally encouraged and indulged in.

I would state that since the football craze became paramount here nearly all other athletics have dwindled or become subservant to it; so that instead of all the cadets actively participating in athletic exercise, only a few do so."

Dr. Walton pointed out that physical training of cadets was not under the Medical Department control and that it would seem naturally to belong there. More harmonious working toward securing best results, would be accomplished if it were under that control. Dr. Walton reported that some improvements had been made in the sewerage and drainage systems but that his recommendations for the installation of the electric lighting of the grounds and buildings had not been accomplished.

The following year, 1896, Dr. Walton renewed his recommendations for improvements made the previous years since no action had been started.

Dr. Walton reported an instance of operation for perforative appendicitis in 1895. A naval cadet, age 18, had a stormy recovery complicated by prostration, recurring hicough, anorexia, epistaxis, jaundiced complexion, petechial eruptions and other evidences of septicemia. The condition slowly improved and passed into recovery.

Dr. Walton renewed his recommendations for the installation of electric lights and improvements to the sewerage system and added that many of the buildings were delapidated and run down in appearance. His recommendations were endorsed by the Board of Visitors, but relatively few improvements were forthcoming.

In 1900, considerable work on construction of new buildings at the Naval Academy resulted in the disturbance of considerable soil throughout the grounds. There was some apprehension that this would cause an increase in disease. The health of the station, however, continued good. Casualties from football were not considered to be serious, and relatively little lost time from academic work resulted. The medical officer continued to

complain, however, that football was played by only a small percentage of cadets and, therefore, its benefits were confined to a few.

In 1901, an epidemic of measles occurred in the city of Annapolis, but only 5 cadets contracted the disease. Prompt segregation, quarantine and disposition of the patients prevented an extension of the disease. During the summer cruise, 13 cadets in USS Newport had a mild forms of measles and all were transferred to the Naval Hospital, Newport, R.I. The work of rebuilding and new construction of Naval Academy buildings progressed during 1900 and early 1901, and with an indicated increase in numbers of the student body it appeared that new sick quarters would soon be needed. Construction of a new hospital was authorized in 1901, but no work was started. The new building were equipped with an electric lighting system representing a vast improvement in the artificial illumination that had been recommended for several years. Fewer complaints connected with the eyes were noted and each room occupied by the cadets was provided with ample overhead and reading lights.

Football continued to account for approximately 10% of the admissions of midshipmen to the sick list. None of the injuries was serious, however. Dr. Wieber complained of the inadequacy of the sick quarters, which were maintained in one of the barracks buildings. He was particularly critical of the messing situation. Midshipmen in the sick quarters were subsisted on the cadets mess from an adjoining building, but this required the mess attendants to be away from their regular duties in the cadets mess. Most frequently the meals served were cold and improperly cooked. In addition, the medical staff, who had no messing facilities, were required

to leave the building and get their meals in the town of Annapolis. The hospital attendants had no living quarters, being required to live in town. As a result three times a day, half of the staff had to leave the grounds for their meals.

Dr. Wieber recommended the construction of new buildings to serve as a hospital. He recommended that the site should be some distance away from the Academy proper. He made a special point of recommending that adequate quarters for the staff should be provided when the hospital was built. Marines and other enlisted men were housed in the USS Sante, the station ship. Dr. Wieber considered this to be an unsatisfactory arrangement. Dr. Wieber reported that the dentists on station continued periodic examination of the teeth of cadets. The cadets were impressed with the importance of sound teeth to good health, and had been instructed in the care of the mouth and teeth. He noted a fact, worthy of mention, that in 3 years only one cadet had not needed dental work.

The Surgeon General, in his report for 1903, noted that plans for the construction of a naval hospital in Annapolis were being reviewed and that its estimate of \$200,000 was not too much to allot to the construction of an adequate hospital at that station. Even so, no work was started on its construction.

In his report for fiscal year 1904, the Surgeon General noted that plans for a new hospital at the Naval Academy had been approved after most careful study of the needs of the station. The Surgeon General further noted that the number of midshipmen had in recent years been

almost doubled and the number of enlisted men of the Navy and Marine Corps on duty there made it most desirable that a hospital should be built at the earliest practicable time. The Bureau considered that bids for the construction of the hospital were much too high; only two bidders responded to the advertisements, and therefore, it was proposed that new advertisements should be published. A new hospital was planned with a view toward the proper accommodations of both midshipmen and officers on the one hand and enlisted men on the other. The necessity for such a new arrangement required somewhat more elaborate plans than would have otherwise been necessary. Patients whose hospital stay was considered to be more than temporary were continued to be transferred to the Naval Hospital, Washington, for treatment.

During fiscal year 1906, an epidemic occurred during which 10 midshipmen developed diphtheria. Strict quarantine procedures were instituted, and even though throat cultures of additional numbers of midshipmen showed evidence of diphtheria bacilli no more cadets came down with the disease. Fortunately, most of the cadets were away on summer cruises when the epidemic occurred, and classes were delayed in starting. Diphtheria antitoxin was given as a prophylaxis, so that the epidemic did not spread, although four Marines came down with the disease before the epidemic was over.

This epidemic added substance to the repeated recommendations for haste in the construction of a naval hospital isolated from the Naval Academy proper. Very likely this epidemic was taken at face value, since construction went forward on the work to provide a new naval hospital outside the Naval Academy proper.

The Surgeon General, in his annual report of 1907, noted that the hospital at Annapolis although uncompleted at the end of fiscal year was in partial operation. He pointed with pride that the existing structure, when completed, would leave nothing to be desired, and that it would be an ideal institution of its kind. It would receive the sick among the large officer, midshipmen and enlisted personnel of the Naval Academy, including the Marine Barracks and the station ships, as well as those from visiting ships as the occasion might require.

By 1911, the new hospital was in full operation. The medical officers at the hospital and at the Academy, however, continued to note deficiencies in the lighting system, particularly as provided for the cadets studying. The medical officers continued to emphasize the necessity for strict adherence to prescribed standards for visual acuity. They pointed out that midshipmen must be deck officers and even though a visual error might be corrected by glasses, weather conditions often make the use of glasses unsatisfactory or impossible. They noted that appointment or continuance of weaklings at the Academy, after rejection on physical examination, too frequently resulted in the assumption for the government of an early claim to the retired list.

The Surgeon General, in 1911, expressed the opinion that competitive and spectacular athletics are undesirable in the service, especially among midshipmen who are prone to overtrain for or hazard too much in a contest. The Surgeon General pointed out that the function of the Naval Academy is to equip young men mentally and physically for their chosen profession. He stated that physical training and athletics generally should be indulged

in so as to safeguard the interests of government and the individuals as well. He continued to express the opinion that football may be somewhat hazardous as it was then being played and that its disabling after effects make it questionable as a sport to be encouraged where future naval officers are being trained. He further suggested that prolonged rigorous courses of physical exercises necessary to attain excellence in physical sports is believed to be dangerous in its after effects upon those who indulge in athletics sports sufficiently to excel in them.

He pointed out that under conditions of service at sea it becomes impossible to continue rigorous exercise and the individual easily falls prey to degenerative changes and tends to become obese, to lose physical stamina and in the end he fails to render as many years of efficient service as does his less athletic but symmetrically-developed classmates. To substantiate this opinion, medical records of 625 former athletes in the Naval Academy classes of 1891 to 1911 were examined to determine the bearing of early overtraining upon physical efficiency in later life. Of these, nine officers had died and 12 had retired. Of the 21 casualties, 6 had contracted tuberculosis 8 had mental or nervous diseases. Three suicides and 2 retirements were traced indirectly to alcoholism, one death each to acute dilation of the heart and valvular disease which the Surgeon General reported were directly attributable to track and crew racing and one death was owing to an injury received in a football contest. Of the remaining 604 in service 198 had disabilities or abnormal conditions of sufficient moment to be of official record and

to which their record as athletes had a possible or probable causative relationship. While not in most instances physically incapacitating the individuals tend toward an imminent or premature loss of service.

The opinion that long-distance crew or foot racing is not beneficial, but productive of serious harm was not one held alone by the Navy medical officer but was shared by those in civil life best qualified to judge. It was believed that it needs but a decided stand on the part of an institution of the standing of Annapolis for the adoption of a safe and sane standard in those and other endurance contests to initiate a similar movement in the athletic world making success dependent more on skill than less upon brute force.

The Surgeon General criticized the practice of employing, on a more or less permanent basis, the professional coaches and trainers at the Naval Academy. It was, he believed, not to be in the best interests of the Navy. The chief aim of such professional coaches and trainers was to produce winning teams since their reputation largely depended upon winning. The Surgeon General went on to say that it would appear that the Navy possesses those among graduates who, with specially detailed medical officers, are capable of this duty, and the importance of the subject should justify the assignment of such officers for this purpose.

The Surgeon General noted that an examination of the reports on the physical condition of four classes at the Academy showed a marked gain in average weight and strength during the first year a slight loss of average weight and a decided loss of strength during the subsequent years of training. Since this bears a constant relation to the decrease in compulsory exercise, he said, during the years as shown by the reports,

it is evident that the mind is cultivated at the expense of the body in the case of the third, second and first classes. He recommended the Swedish system of exercise, which was then on trial at the Naval Academy. The Swedish system was essentially a system of gymnastics under a medical officer in charge. The object was to implant this system in the Marine Corps. He urged the adoption of the Swedish system of physical training by the entire personnel of the Navy. The aim he said should be to develop a strong resistant body rather than to make an athlete of a given individual.

The Surgeon General stated that insofar as possible out-of-door exercise should be encouraged. He believed that all should participate in physical drill on deck daily, the weather permitting. He further recommended that those who have duties below decks should be required, when possible, to spend time daily on deck in the fresh air and sunlight. The Swedish system, he said, appears to be more nearly adaptable to the needs of our Service and will probably be adopted more widely, in a modified form.

The Surgeon General went on to criticize the physical exercise described by the recently promulgated General Order No. 94. This general order prescribed a quarterly participation--particularly by officers--of a walk of 50 miles within 3 days or an equivalent bicycle or horse back rides.

During World War I, considerable expansion of the hospital facilities were necessary to take care of the vast expansion of the Navy during that war. This expansion was accomplished by building a temporary, wooden ward

building which increased the capacity of the hospital by about 150 beds. No particularly remarkable events occurred in the 4 or 5 years preceding World War I, with the exception of an occasional instance of typhoid fever and several epidemics of diarrhea. In this period, there was some concern about the possible development of tuberculosis, but the Holstein herd of cows owned by the Naval Academy, and used to supply the midshipmen with fresh milk, were found to be not infected with tuberculosis bacilli. The herd was under the supervision of the Bureau of Animal Husbandary, a division of the Department of Agriculture, and the more than 300 gallons of milk produced daily was maintained in the highest quality.

In 1918, there was some concern that an epidemic of diphtheria might arise but only one case developed. All of the midshipmen were administered a antitoxin with excellent results.

During World War I, and particularly in the years following, many improvements were introduced in the hospital. Most of these improvements were in relation to the food service department. The installation of new refrigeration equipment, a new dishwashing machine, and the building of new store rooms and working space contributed much to the messing facilities. The inpatient population totaled about 1,700 admissions annually with an average of about 50 at any given time. Less than half of the midshipmen admitted to the sick list at the Academy Dispensary were transferred to the hospital for further treatment. Most of these admissions represented minor complaints, or conditions of short duration, and were easily cared for without admission to the hospital.

Many of the temporary buildings erected during World War I were continued in use until 1938 when the last of the temporaries were replaced with modern structures. These additions included a two-story maintenance, a three-story west wing, housing the operating room, X-ray and other clinical services and a new modern quarters for hospital corpsmen. Considerable construction and modernization in 1941 and throughout World War II kept pace with the increasing requirements and demands incident to the vast expansion of the Navy during World War II.

ARROWHEAD SPRINGS,
SAN BERNARDINO, CALIF.

This facility was one of many resort hotels leased by the Navy Medical Department for use as a convalescent hospital during World War II. The Arrowhead Springs Hotel was located on the state highway No. 18, 6 miles north of San Bernardino, Calif., at an elevation of about 2,000 ft. It was leased from the owners in May 1944, and immediately converted into a convalescent hospital. There were 139 rooms and 10 bungalows in the hotel complex. It was equipped with a beautiful outdoor swimming pool, a built-in little theater seating 130 and other recreational facilities on a 1,700-acre mountaneous terrain.

The hospital was commissioned 23 May 1944 with CAPT Joseph A. Biello, MC, USN, Retired, as Commanding Officer. The first patients were received the next day. There were 500 ambulatory patients transferred from the Naval Hospital, Corona, who formed the first contingent of patients in this facility.

On 26 August 1944, a timber and brush fire in the scrub growth about two miles off the hospital reservation spread rapidly and for a time threatened to involve the entire reservation. Between about 1000 and 1800 that day, the hospital was seriously threatened. In the early evening, however, immediate danger seemed to have passed, although fires continued to break out sporadically nearby until the next morning. The hospital fire department, hospital corpsmen and some ambulatory patients cooperated with the surrounding community fire departments and were able to keep the fire away from the hospital reservation.

On 17 June 1945, the designation of this facility was changed from U.S. Naval Convalescent Hospital to U.S. Naval Special Hospital. No change occurred in the type of patients received or the duties performed.

During the summer of 1945 the construction of five temporary buildings was begun to provide additional space for the library, offices of the educational services department, occupational therapy, welfare and recreation, ships service, brig, civil readjustment, insurance and legal assistance, Red Cross, post office and officers club. All offices in this new construction were occupied by 1 December.

Following the first group of 500 patients received from Corona, most of the patients subsequently received were from Naval Hospital, Long Beach or from Naval Hospital, San Diego. The patients included those recuperating from all but mental and dental conditions and tuberculosis infections. All were male and ambulatory, most of whom were orthopedic patients.

Up to 1 November 1945, a total of 5,789 patients had been admitted. The hospital served to help alleviate overcrowding in the nearby naval hospitals and at the same time provided a beautiful, comfortable place to convalesce. Approximately 600 patients remained on board on 1 November 1945. Of the more than 5,000 discharged, more than 2,800 were returned to full duty and an additional 700 were returned to limited duty. More than 700 were surveyed to civilian life and about 800 were transferred for further treatment in other naval hospitals.

Since most patients were ambulatory, a great deal of emphasis was placed upon a well-rounded rehabilitation program, with work, study and pleasure combined. The hospital was equipped with a curatorium, built especially for administration of physical therapy, steam baths, Nauheim

baths, and massages, and was especially adaptable for convalescent patients. The climate was excellent and well suited for the treatment of upper respiratory infections.

The rehabilitation department was staffed with a physical training and educational services officer, occupational therapist, welfare and recreation officer and a representation of the Red Cross, who with the rehabilitation officer and the chaplain initiated a comprehensive rehabilitation program.

All the patients were required to take part in basketball, softball, archery, horseshow pitching, shuffleboard, or one of many other activities all concentrated in that area. It was possible for each man to find something in which he was interested to participate in as a part of his physical training. Those patients requiring special exercises were treated individually, as indicated.

The educational services department was organized in conjunction with the San Bernardino Valley Junior College and the San Bernardino High School. A program was initiated whereby men interested could attend regular classes or special review courses under the instructors at those schools. In addition, the junior college furnished a teacher five mornings a week at the hospital to conduct remedial reading classes. All patients unable to pass a seventh grade test were required to attend this class. Many of them were able to obtain credit in high school or college work. Some graduated from high school and one from the junior college.

A series of form lectures were given weekly at the hospital by imminent speakers on timely subjects of interest. These lectures were maintained for more than a year through the cooperation of the junior college

and the University of Redlands. The lectures were attended not only by patients but by interested staff members.

ASBURY PARK, NEW JERSEY

The Naval Convalescent Hospital, Asbury Park, N.J., was commissioned 10 April 1945. CAPT William H. H. Turville, MC, USN was medical officer in command.

The hospital consisted of the former Berkeley-Carteret and Monterey Hotels. These hotels, together with convention hall salarium open-air pool and garage formed a large beach area on the ocean front. Prior to the establishment of a hospital, this group of buildings had been used by the Navy pre-midshipmen school, and before that, as a receiving ship for the British Royal Navy, at which time it was known HMS Asbury. The former Berkeley-Carteret Hotel was used as the main hospital building. It consisted of the main floor, mezzaine and five ward floors with a total capacity of 1,500 beds. On the ground floor were located the administrative offices, the officer-of-the-Day's office, examining room, civil readjustment office, medical storerooms, linen room, laundry, pharmacy, snack bar and patients' recreation rooms. The upper floors were served by three passenger elevators and one service elevator.

On the mezzaine floor was located the palm room, used as a reception center by patients and their guests. The oval and mandarin rooms were used as an officers lounge and dining room for both staff and officer patients. The large crystal ballroom was partitioned, half being used as a chapel and the other half as a dining room for handicaped patients. Other activities on the mezzaine floor included a library, arts and skills

units, sick officers quarters and the Commanding Officers quarters. The five upper floors were used for the clinical services offices and wards.

The nearby, former Monterey Hotel was used as living quarters for staff enlisted personnel. The general mess for ambulatory patients and staff and enlisted mens' lounge and recreation area, ships service, post office, small stores, banking facilities, dental offices, prosthetic laboratories and bag room were also located in the Monterey Hotel.

Convention hall, located about 300 feet south of the main building on the ocean front, was used as a center of entertainment for all hands, including the showing of movies, the holding of dances and presentation of shows and concerts. Physical training and gymnasium activities were located in convention hall as well as class rooms and shops of the educational services department. In the education services department were included a wood shop, radio and photographic laboratories and drafting room. The open-air pool and beach were directly east of the Monterey Hotel where well equipped lockers and shower facilities were available. Swimming and sunbathing were the main recreational interests for patients and staff during the summer months. The salarum was located due east of the Berkeley Hotel and connected to it by an overpass. A separate sun deck area and recreation rooms were reserved for officer and enlisted staff personnel.

As with other Navy convalescent hospitals the principal emphasis in this hospital was to provide rehabilitation facilities. It was established to help relieve congestion in the nearby general naval hospitals. Admissions

of patients were limited to those who required no treatment other than rest, diet, physical therapy or hydrotherapy. On 7 July 1945 the name was changed to U.S. Naval Special Hospital, although its general function was not altered thereby.

Almost all patients were ambulatory, on admission. A small number of patients were admitted to this hospital as emergencies from the Ammunition Depot at Earl, N.J. and from among those living in the area who became ill while home on leave. In the main, these patients were cared for until ready to return to duty. Fracture and postoperative patients made up a large percentage of the patients received. Physical therapy and remedial gymnasium activities were available for those for whom such treatment was indicated. More strenuous physical activities was available as the patients convalesced.

This hospital received neuropsychiatric patients; individual and group psychotherapy was offered to provide an adequate readjustment to civil life. The rehabilitation program was a coordinated activity generally initiated by the ward medical officer. Physical therapy, physical training or work detail were assigned to each patient.

A full program of rehabilitation and civil readjustment procedures were provided for each patient.

ASHVILLE, NORTH CAROLINA

This U.S. Naval Convalescent hospital was commissioned 24 May 1943. The hospital occupied the facilities previously known variously as the Kenilworth Inn or Appalachian Hall. The first Commanding Officer was CAPT William A. Angwin, MC, USN. It was established to relieve the congestion in the naval hospitals in the Norfolk area.

The first group of patients, numbering 52, arrived 23 February 1943. Since the hospital was not yet ready for the reception of patients the Navy Rest Center, Grove Park Inn, nearby, was designated as an annex until such time as the hospital could be made ready. These 52 were joined by other groups of patients until by 6 March, 125 patients were in the Grove Park Inn. By the time the main hospital was ready for commissioning in May, however, only four remained to be transferred to the Kenilworth unit.

The first large group of patients arrived 27 May 1943 from the Naval Hospital, Norfolk, Va. During the 3 years of its existence, there were 6,338 patients treated in the hospital.

Before the Navy took over the property, it was under lease by the Ashville Holding Company to Appalachian Hall, Incorporated, operated by Drs. William Ray and Mark A. Griffin as a sanatorium for patients with mental and nervous diseases. The property consisted of 13 acres in the Kenilworth Park section of Ashville, N.C. The site was splendidly suited for the purpose of convalescence. The buildings were on a flat area of an elevated ridge between two hollows overlooking the village of Biltmore with a superb view of the surrounding country and mountains. It was in a sparsely-settled region, quiet and secluded, yet only two miles from the

center of Ashville. Bus service to and from the city included a station inside the hospital grounds.

The main hospital building was constructed of hollow tiles and stucco in the style of English country-house architecture. Originally erected as a hotel, the building was in the form of a T, with its greatest length in the lateral of the T with a short central stem. There were five stories above the concrete and stone basement. A wide tiled veranda extended along the entire front and around both ends of the main part of the building. Part of the veranda was covered and enclosed. The main building faced south. The five stories of the main building contained 225 bedrooms capable of housing 401 patients and 60 staff members; relatively little alterations were necessary to equip it as a convalescent hospital.

Originally denominated as a convalescent hospital the name was changed officially to U.S. Naval Special Hospital, 6 July 1945. The planned emphasis on rehabilitation, made this facility ideally suited for its purpose. The patient entering the hospital received the benefit of a complete change in his Navy routine in much the same way that a person in civil life benefited by a vacation. That change in physical environment was agumented by a policy of no regimentation of patients, providing a program without undue emphasis on guidance that encouraged the patients to engage in useful or occupational work of their respective interest. Occupational selection was permitted to include sports, games, serious study, literary pursuits, reading or whatever. In this way, work and play were combined into a form of occupational therapy tending toward complete rehabilitation without the patient being awar of it. Although

education was not made compulsory, the program was emphasized so that most patients took advantage of the facilities offered.

Characteristic of most of the convalescent special hospitals maintained by the Navy during World War II, this hospital had a preponderance of orthopedic patients. Most of these required individual corrective treatment; therefore, the physical therapy department was kept quite busy. Physical training also was emphasized.

An active welfare and recreation department was in operation throughout the period this hospital was in commission. In the hotel ballroom, a stage was built and a movie projector and screen installed. In the basement, a large room provided space for ship service, billiards, pingpong tables, and two bowling alleys. Game equipment proved to be a splendid addition to therapy in giving patients a cheerful and carefree outlook and at the same time providing controlled exercises for coordination of unused muscles and limbs. This indoor recreation was supplemented, in season, by golf, tennis, badminton, archery, horseshoe pitching, shuffleboard, baseball, and other activities. As well as work in the gardens going on picnics and making trips to nearby points of historic and scenic interest.

Since many of the patients in this hospital were expected to be returned to civil life, an active civil readjustment program was established. In this department, each departing patient was informed of his rights and benefits as a veteran, and each man was made to believe that the Navy was interested in his future.

The location of the hospital was found to be inappropriate for patients with respiratory or joint diseases. Although the altitude was fairly high--about 2,100 feet--rainfall was rather excessive and there

was considerable dampness. In the winter it was found there was much coal dust in the air. Chronic respiratory patients invariably fared poorly. The care of rheumatic fever patients was somewhat unsatisfactory in that these patients frequently required prolonged bed rest, a fact which did not contribute to their mental well being when most of the other patients were ambulatory and enjoying practically a "free gate." An interesting sidelight in connection with the type of patient received in this hospital was that concerning the great increase in the number of patients operated upon for ruptured intervertebral discs. During the first 12 months of its existence, this hospital received 9 patients of whom 6 were sent to duty and 3 returned to the referring hospital for further treatment and disposition. During the next 16 months, 47 more were received of whom 25 were sent to duty and 7 were transferred to another hospital for further treatment, 9 were surveyed out of the Service and 6 were still under treatment in October 1945.

The commanding officer noted a frequency in the history of trauma sustained in physical training among orthopedic patients, especially in fractures of the carpal and scaphoid bones and dislocated knee cartilages. The commanding officer wondered if the advantages of intensive physical training might not prove to outweigh this obvious disadvantage.

The commanding officer included in his final report, an observation that the single most effective portion of the rehabilitation program had been diversified and complete physical therapy and mechanical therapy regimes. Since many of the patients received were admitted very soon after definitive treatment had been administered, the hospital was able to initiate physical therapy and muscle building exercises at the optimum time. He noted that the welfare and recreation program, coordinated with educational services and physical training departments, was very effective in the rehabilitation.

Among the noted personalities who visited the hospital was Miss Helen Keller, widely-known blind and deaf author, who addressed all hands.

BAINBRIDGE, MD.

The Naval Hospital, Bainbridge, Md. was commissioned on 4 February 1943. This hospital was a detached command of the Naval Training Center, an activity which occupied 1,183 acres. The Naval Training Center and Hospital were located about midway between Philadelphia and Washington, D.C., near the Susquehanna River. As a principal subordinate command of the hospital was the Hospital Corps school.

The first commanding officer of the hospital was CAPT A. D. Davidson, MC, USN, who remained in command throughout World War II until 15 April 1946. The hospital and Hospital Corps school occupied about 88 acres of the training center compound. The hospital was inactivated on 15 May 1947. During the Korean conflict, the hospital was reestablished, 3 April 1951, with CAPT H. L. Goff, MC, USN, in command. It remained in commission until 27 November 1957, when it was designated as a naval dispensary in support of the training center.

The training center is situated adjacent the township of Port Deposit, Cecil County, Md., on Highway 222 between U.S. 40 and U.S. 1.

The low priority of the hospital group of buildings in the construction schedule created many early administrative and professional problems. The hospital was only 33% complete in October 1942, when the training center was commissioned. This necessitated the use of recruit barracks for the care and treatment of the recruit sick and injured until February 1943, when the hospital was commissioned. Owing to the haste with which the hospital buildings were occupied, supplies and equipment received during the construction period were stored in buildings scattered throughout the training center. This resulted in many items being misplaced and later,

much difficulty was experienced in locating some of these items. Lack of housing facilities, poor transportation and the relative isolation of the hospital and training center area away from large labor markets, resulted in many difficulties in the recruitment of civilian personnel for the operation of the hospital commissary and other service departments. As a result of this problem, the hospital functioned throughout World War II with military commissary personnel.

At the time of commissioning, there were approximately 12,000 recruits under training at the center and the hospital was then only 92% complete. For some time following commissioning, some recruit barracks in the training center were continued in use for the care of the sick and injured. The original commissioning staff of the hospital consisted of 32 medical officers, 2 dental officers, 1 Supply Corps officer, 11 Hospital Corps officers, 27 nurses, and 296 hospital corpsmen.

Construction, occupation and training of recruits continued during the course of the preparation of the training center for full use. Extremely muddy and, at times, impassable roads made transfer of patients from training center barracks to the hospital very difficult. Ambulances on many occasions were unable to pass along the muddy roads. The hospital commissary began operations on 11 February 1943 and was then available for the hospital enlisted staff and students and staff of the Hospital Corps school. The first surgical operation was performed on 17 February 1943. By the end of 1943, 12,456 admissions had been recorded. In 1944, there were a total of 18,038 admissions; in 1945 a total of 29,963 were admitted. The patient load, in 1946, declined to 18,594, and further declined, in 1947,

to only 2,002. The hospital was deactivated on 17 March 1947, at which time CAPT G. A. Alden, MC, was in command.

The hospital compound sloped gently to the southwest and the east. The highest point was at the southern end of the area and was about 360 ft. above sea level. The lowest point at the southern end of the hospital compound was about 260 ft. giving a variation of approximately 100 ft. from the highest to the lowest point. Consequently, erosion was one of the most pressing problems faced in the early operation of the hospital. Considerable attention was given to correcting this condition which involved grading and seeding of approximately 61 acres of ground during the first 18 months of operations. It was necessary to control drainage in the areas most affected by erosion with retaining walls, ditches and basins of concrete or brick which were constructed as preventive measures.

Generally, the hospital buildings were constructed of cinder block and wood, and were not intended as permanent structures. There were more than 80 structures within the compound. New construction and enlargement of facilities continued throughout the war. On several occasions more than 2,500 patients were hospitalized at given times. Most of the buildings were single storied but a number of them, particularly the later buildings, were two stories in height.

The hospital provided treatment and care for all conditions including neuropsychiatric patients.

The hospital was recommissioned 3 April 1951, under the command of CAPT H. L. Goff, MC, USN. This reactivation was necessary to meet the

requirements of the vast expansion of the Navy during the Korean Conflict. The hospital remained in commission until 27 November 1957 when the designation was changed to navy dispensary in support of the navy training center.

The Hospital Corps school was disestablished 15 November 1957.

BALBOA, CANAL ZONE

This naval hospital was commissioned 15 August 1942 in support of Navy operating forces on the Pacific side of the Panama Canal Zone. The hospital functioned as a unit of the Naval Operating Base, Balboa, in the 15th Naval District.

Between 15 August 1942 and 31 August 1945 the total number of patients admitted was 6,425, including 470 officers. The daily patient census averaged about 200.

The hospital functioned as a general hospital, staffed and equipped to deal with every type of medical and surgical problem with the exception of neurosurgery and patients requiring roentgen therapy, which was available at the Naval Hospital, Coco Solo. Patients who needed extended care were transferred to a naval hospital in the United States. Rehabilitation was limited for this reason. The primary purpose of the hospital in Balboa was for treating and returning patients to duty as soon as possible. An outpatient clinic for dependents, including gynecologic, obstetric and pediatric services, was established early.

Since the hospital was located in a hot climate, tropical medicine was of primary concern and consultations were regularly made with specialists attached to the Army hospital at Ancon. Certain laboratory examinations were regularly made at the Army Gorgas Hospital. All postmortem examinations were also done there, in accordance with Canal Zone law. There were inordinately large number of neuropsychiatric patients received in this hospital since this facility was the last naval hospital available to ships transiting the Canal on the way to the Pacific Theater. Preventive medicine,

exclusive of routine inoculations, was not practiced normally, since this was the function of the health authorities of the Canal Zone. Tropical diseases were not endemic, during the war, in Panama. Relatively few admissions were for malaria and most of these represented relapses by patients who had acquired the disease in the Pacific. There were some admissions for amebiasis.

No acute traumatic or mental conditions owing to warfare were admitted although combat-induced conditions in the chronic stage formed about 10% of the hospital population. Fungus infections were very common, but most yielded easily to treatment. Disability owing to skin conditions was considerably less than in other tropical areas.

The hospital buildings were of a permanent type construction, modern in design and completely equipped with all facilities for the care and comfort of patients and staff. The hospital proper consisted of five general wards approximately 135' x 24'; sick officers quarters, providing 23 bedrooms 13' x 15' with connecting baths; sick dependents quarters provided 15 bedrooms 13' x 15' with connecting baths and a neuropsychiatric ward 135' x 24'. The normal bed capacity was 314. Building 1, which housed administrative offices and special departments was five stories high. The ward buildings were of three stories all served by elevators. All wards were provided with solarium.

BREMERTON, WASHINGTON

This naval hospital was constructed to support the Navy Yard, Puget Sound. It was commissioned 1 April 1903 with Passed Assistant Surgeon A. R. Alfred, MC, in command.

Health care delivery had been provided in the Puget Sound Area since the early 1890's. A small Navy station was established on Sinclair's Inlet in September 1891. The sick bay of the USS Nipsic was used as a dispensary for the navy yard until November 1901, when medical activities were transferred ashore to a small frame building adjacent drydock No. 1. In 1902, two small frame buildings to house the sick quarters of the yard were constructed by the Cotton Bros. and Company of Oakland, Calif. These buildings consisted of one-story structure 73' x 23' and a two-story annex 37' x 36'. These buildings cost slightly more than \$11,200.00 and had a bed capacity of 14. They were first occupied on 26 January 1903. These sick quarters were designated as a naval hospital, 1 April 1903.

On 2 March 1907, an Act of Congress authorized a group of permanent buildings in the navy yard for hospital facilities but no funds were appropriated until 1909 when a contract was awarded to the Concermon Bros. for the construction of three buildings: the present administration building, the subsistence and operating building and one ward building. Construction was begun 29 May 1909 and completed 27 January 1911. The Medical Department, although they took possession in January 1911, did not occupy the buildings at the hospital until a year later. Surgeon A. Farenholt, MC, refused to utilize the buildings owing to defects in the drainage system of the galley in the basement of the hospital. Actual occupancy occurred 1 January 1912, with Surgeon F. C. Cook, MC, in command.

New construction of additions throughout the years has raised the capacity of the hospital to about 700 beds with 418 in permanent structures. The capacity can be increased to more than 1,000 in an emergency. The highest number of patients on board at any given time, occurred during World War II when 1,033 were hospitalized.

The hospital is located on one of the highest points of the Puget Sound Navy Yard and occupies the northern two thirds of a reservation containing about 20 acres. The permanent buildings of the main group are of brick construction with a three-story administration building, and the two-story subsistence and operating building forming an annex from which two-story ward buildings extend on either side. Temporary one-story buildings, erected during World War I, were removed prior to World War II. Additional ward spaces were provided during World War II.

The present complex consists of more than 30 buildings and is about 240 ft. above sea level. The north boundary of the hospital adjoins the city of Bremerton at street level and extends two blocks in an east-west direction. Utility services for the hospital are supplied from the Navy Base. From the hospital grounds may be seen the snow-capped Olympic mountains and the towering Mt. Rainier.

The Puget Sound Area was first visited by Europeans, in 1792. The British explorer, Captain George Vancouver discovered the waters which he named Puget Sound. Captain Vancouver named several landmarks for British officers and other friends. These place names include Mt. Baker, Port Orchard Bay, Mt. Rainier and Vashon Island. Mt. Rainier was called Tankoma by the Indians.

In the 1840's, and later, in 1870, a board of engineer officers, U.S. Army made a careful study of Puget Sound and strongly recommended that a naval station and dry dock be established in this area for the benefit of the Navy and Merchant Marine. LT Charles Wilkes, USN also explored Puget Sound and is credited as giving American names to many of the landmarks previously named by Vancouver. The first chart and map of the Puget Sound area was prepared by Captain Vancouver and was widely used by his successors.

Early exploration and inspection did not lead to the establishment of a naval base in the Puget Sound area. In 1867, when the United States purchased Alaska, this area became highly desirable for a base. Although successive inspection teams and individuals visited the area for the purpose of determining the desirability of establishing a navy station here, no action was taken until 1888 when an Act of Congress instructed the Secretary of the Navy to examine the coast in Oregon, Washington and Alaska for the purpose of establishing a suitable site for a navy yard and dry dock. The Secretary of the Navy appointed a commission headed by CAPT A. T. Mahan, USN, who recommended the site between Dye's and Sinclair inlets consisting of about 1,800 acres, located about 15 miles from Seattle. The Congress did not act and in 1890 another commission was appointed headed by CAPT T. O. Selfridge, USN who recommended the same site for a navy yard. This time, Congress authorized the Secretary of the Navy to acquire the tract of land not exceeding 200 acres, and on 16 September 1891 the Navy took possession of the first land now comprising the Puget Sound Navy Yard.

In June 1904, the sick quarters became so crowded that it was necessary for the Commandant to notify the Pacific Squadron that the hospital could accommodate no more patients from the fleet. During the same year occurred

the death of Moses Seattle, widely known and popular Indian of the Bremerton--Hipsack area and grandson of the famous chief, Seattle, for whom the city is named. Seattle died at the naval hospital as a result of burns. He was buried in the old cemetery at Suquamish, Kitsap County, some distance from the well-tended plot of his famous grandfather. During 1905, as many as 224 patients were hospitalized resulting in much overcrowding and the need for using temporary buildings as an adjunct to the hospital. The nearest civilian hospital was in Seattle and therefore the naval hospital served as a yard dispensary and for hospitalization of the more seriously injured or ill civilian workers.

With the commissioning of the new hospital the old hospital building was sold to private interests in Bremerton and as late as 1949 was still in use as the Harrison-Memorial Hospital of Bremerton.

At the close of World War I, there were approximately 5,000 enlisted men in training at the Training Station, Puget Sound, 5,000 at the Training Station, Seattle, 500 at the Receiving Ship, and an additional 500 Marines and Navy men were attached to ships of the patrol service. In addition, there was an excess of 6,000 civilian employees in the Navy Yard, ammunition depot and other Navy stations, who were eligible for hospitalization. Despite constant overcrowding and ever-increasing patient loads the hospital met all demands. During September 1918 a severe epidemic of influenza occurred, and characteristic of this influenza epidemic, a large number of deaths resulted. One medical officer, one nurse and two hospital corpsmen of the hospital staff were among those who died. The total deaths numbered 77. The total number of admissions during 1918 was 2,937.

There were no quarters for medical officers in the World War I period and this condition created much dissatisfaction, as members of the staff were forced to live in basement rooms without baths, or in Seattle. Owing to this condition, many Reserve medical officers refused to accept commissions in the Regular Navy.

By the end of 1921, conditions had returned to normal. The hospital staff then consisted of 6 medical officers 2 pharmacists and 45 hospital corpsmen. During 1921, the cemetery was removed from the hospital reservation. Unclaimed bodies, numbering 62, were removed and transported to San Francisco where they were reburied in the Presidio National Cemetery. In 1922, the city of Bremerton donated a camp site at Camp McKeen on Lake Kitsap, which was used throughout the summer for recreation of hospital corpsmen. In 1925, the outpatient clinic was transferred from the yard dispensary to the naval hospital.

Extensive landscaping of the hospital grounds was commenced in 1927 with the cooperation of Mr. Peter Oemlauf, landscape architect of Seattle. In 1927, a new Hospital Corps quarters was approved and constructed. During 1941, considerable expansion of ward facilities was made to take care of the increasing numbers of Navy Yard personnel. During World War II, the patient load increased from a low of 2,343, in 1941, to a high of more than 8,000, in 1945.

At the end of World War II, the bed capacity of the hospital was established again at 550. Considerable remodeling and reequipping of the hospital with more modern facilities have occurred since then.

The Naval Hospital, Bremerton enjoys a particularly good relationship with the city of Bremerton. The hospital is considered very much a part of the community. Bremerton was established in 1891, and the great

portion of the population owes its existence either directly or indirectly to the Navy Yard facilities. The first streets in Bremerton to be paved was in 1912. The present population of the city is more than 30,000. It is one of the larger cities in the United States with no railroad connection. Visitors to the city must arrive either by automobile or by ferryboat.

BROOKLYN, NEW YORK

The land occupied by the Naval Hospital, Brooklyn, N.Y. for more than 125 years was acquired in the spring of 1824, the original purchase including 23 acres of the old Schenck farm. The purchase price was \$7,650. The deed was given by Sarah and Jane Schenck, widows, Jacob and Ida Barris, and Isaac and Maryann Hanis. The date of transfer of the deed is in dispute, though they generally accepted date is 1 May 1824.

The early history of the Brooklyn Naval Hospital is closely associated with that of the Navy Yard, which was adjacent. The original land purchase for the Navy Yard was in February 1801 and consisted of about 40 acres. Over the years many more acres were acquired by the government, since the Brooklyn Navy Yard was an important facility. Even some of the original hospital reservation was transferred to the Navy Yard. The hospital site was on land once owned by some of the earliest settlers in the so-called Wallabout section of Brooklyn. At the time of the first settlement, 16 June 1637, this area was farmland.

The hospital and Navy Yard border Wallabout Bay where British prison ships were moored and where historians claim that more than 11,000 American prisoners died during the Revolution. Much of the Navy Yard land was swamp area, later reclaimed. The hospital site was described as "the heel portion of the Schenck farm, 56 feet above the water." The name, Brooklyn, was derived from Broukelan or Broukland, old Dutch names. This claim is disputed in the book, "Historic and Antiquerian Scenes in Brooklyn" by T.W. Field who attributes the name of Broukelen, a city in Holland. Broukelen is the Dutch word for marshland.

There have been many historic accounts and books written in relation to New York City and Brooklyn. Most of the civilian historians give short notice to the naval hospital in the early part of the 19th century; Prime, for example, in his history of Long Island, written in 1845, serves as an excellent example of the way in which early historians treated the naval hospital. Tacked on to the description of the Navy Yard is the following two-sentence paragraph:

"There is a large naval hospital in the vicinity, where the sick, aged or disabled seamen are furnished with comfortable quarters and medical attention. The adjoining burial ground has already numerous occupants and their number is annually increasing."

This attitude was typical of the general population toward all hospitals, no less to naval hospitals. One historian suggested, in writing about the Brooklyn naval hospital, "You went to a naval hospital, and you stayed there--in a wooden box."

The Brooklyn Navy Yard was established in 1801. There is evidence that the existing mansion of the Schenck farm was used from the beginning of the use of the Navy Yard for the reception of the sick and injured. The Schenck mansion and other buildings were used for medical department purposes until the main portion of the permanent hospital was put in use in 1838. The 1838 date is generally considered to be the commissioning date of the Brooklyn Naval Hospital. The first structure, added to over the years, was a three-story brick and granite building. In later years, this central structure was added to and connected with other buildings by means of ramps so that by the time of World War II, the hospital had an authorized bed capacity of 1,200.

The Naval Hospital, Brooklyn was one of the first hospitals authorized after the establishment of the Naval Hospital Fund, in 1811.

Early in 1831, Commodore Schancy, Commandant of the Navy Yard submitted to the Hon. John Branch, SECNAV, a bid for the construction of the hospital on the land owned by the Naval Hospital Fund. A bid, dated 21 January 1831, reads:

"Sir: I will furnish all the materials and construct a three-story brick hospital, with a blue stone basement two feet thick with 12 inches outside brick walls, partition walls 8 inches thick, slate roof and cooper gutters, hard finished walls and a small iron grate in each room, the building to be properly timbered with floors of white pine, plain and groved, six panel doors with 7 inch rim lock, as sashes hung with weights and woodwork painted with two coats of white lead. The entire building for the sum of \$19,000. Each wing \$16,000 for a total of \$32,000, the whole for \$51,000. Or any section for its separate sum to be furnished comfortably to the plans submitted. I am, Dear Sir, Respectively,
Your Obedient Servent, Martin E. Thompson"

SECNAV on 4 February 1831, in a letter to the Hon. Michael Hoffman, Chairman of the Naval Committee of the House, referred to the Brooklyn needs, saying that there were buildings on the property, which with little repairs, could be used to house the officers and attendants of the hospital. Secretary Branch pointed out that the requirements at Brooklyn could be met by the construction of a main building of brick at a cost of \$19,000, asserting that accommodations for 50 or 60 sick were quite as large as needed in Brooklyn.

In 1831, the funds from the Naval Hospital Fund having been exhausted in the construction of the Philadelphia and Norfolk hospitals, Brooklyn, Boston, and Pensacola were still destitute of buildings demanded by the wants of the Naval Service. It was not until 10 July 1832, that Congress appropriated \$20,000 for the construction of the Naval Hospital, Brooklyn. Precisely when ground was first broken for the hospital at Brooklyn is not clear, but it evidently occurred in 1833. In that year, on 19 April, New York State ceded to the United States its jurisdiction over the land. SECNAV reported to President Jackson on 30 November 1833:

"Under the appropriations lately made by Congress, new hospitals have been commenced near Pensacola, New York, and Boston, on retired and healthy sites, combining great convenience and beauty. The plans of these have been formed on a scale suited only to the present wants of the service, but capable of easy and appropriate enlargement hereafter, whenever our necessities require it."

As an exhibit to his report SECNAV furnished an estimate of the funds that would be required to finish them in the manner proposed, and asked the President to request an appropriation of \$18,000 toward further construction at Brooklyn and \$5,250 for furnishings. Only the central portion of the hospital was approved and constructed. Construction continued through 1834 without incident. In 1835, SECNAV asked Congress for additional appropriations for the completion of the hospital, which was described as urgent. The Navy commissioners reported to SECNAV, in March 1836, that a hospital building at Brooklyn near the Navy Yard 100 x 48 feet has been erected.

It was described as having a basement two stories and attic. The ground belonging to it comprised 20½ acres upland and 1-3/4 acres of salt marsh and about 12½ of sedge. The commissioners estimated that the amount necessary

to complete the building and to build the necessary enclosures to graduate the grounds, to repair a house for the residence of the surgeon and to construct a landing from the river would be \$34,500 of which there was estimated for 1836, the sum of \$16,500, leaving \$18,000 still deficient. The commissioners noted that if Congress would deem it advisable to appropriate the whole sum the work might be completed, in 1837, the commissioners noted that the present building at New York formed the proposed central building to be connected with two wings when they may be required, such to be 46 feet by 130 forming a front of 196 feet. The cost of these wings and the necessary furniture for the sick and all the appendages was estimated at \$105,000.

The stone used for the central building was said to have been cut from the famous Sing Sing quarries. Surgeon J. D. Gatewood described the facing of the structure, in 1893, as white marble, gone gray with age. Gatewood, in his Notes on Naval Hospitals published in 1893, established the date of commissioning of this hospital as 1838 and added that two wings were built in 1840. Also, in 1840, the building to the east of the north wing of the main structure was erected, and used for a pest house; later, it became the Medical Supply Depot for the Navy, under the stewardship of Surgeon E. R. Squibb. The surgeon in charge of the hospital in Brooklyn, believed to be the first, was Surgeon W. S. Ruschenberger. The first full-time chaplain reported to the Naval Hospital, Brooklyn, during Surgeon Ruschenberger's tour of duty, which was about 4 years. The chaplain was Charles S. Stewart, who probably was a Protestant.

On the site of and connected with the Naval Hospital, Brooklyn, was established the progenitor of the Navy medical supply system. The credit for the beginning of the medical supply system goes largely to Surgeon E. R. Squibb, who later resigned to found the pharmaceutical company bearing his name. It is probable that the subjoined pest house was the space first used by Surgeon Squibb in his efforts to standardize the drugs available to his fellow Navy surgeons. It was in this building where Dr. Squibb performed his numerous experiments in the purification of ether. During these experiments, he started many fires and lost portions of his fingers by the exploding ether. The laboratory, as this early version of the Navy Medical Supply System was called, was described, in 1869, by Styles in his history of Brooklyn:

"In appropriate juxtaposition with the hospital is an extensive laboratory for the manufacture of medicines for the Navy. The chemical and mechanical arrangements of this laboratory are remarkably adaptable to their use; the laboratory being the only institution of its kind possessed by any government."

Although the laboratory technically was a separate command, its position on the hospital compound requires that it be dealt with since the activities of the laboratory were closely intertwined with those of the hospital. Surgeon General, James C. Palmer, in his annual report for 1872 stated:

"The Navy Laboratory at Brooklyn is the most important of all establishments belonging to the Medical Department of the Navy, because it is the source of all our supplies."

For a time, the laboratory fulfilled a dual purpose. Prior to the Civil War, it was utilized for the indoctrination of young medical officers.

The pressure of war forced its discontinuence as a school however and the school was not again activated until 1893.

At the outbreak of the war between the states the Brooklyn hospital was staffed by two medical officers: Surgeon John A. Lockwood and Past Assistant Surgeon Albert L. Gihone. The close of the year 1861 SECNAV reported with satisfaction that the medical staff of the fleet had been enlarged by calling retired officers back to active duty and by giving acting appointments to reservists. Commanding the hospital at the close of first year was retired Surgeon Thomas L. Smith assisted by Surgeon Thomas V. Leach and assistant surgeons William K. Van Reypen, G. S. Franklin and Daniel McMurtrie. The hospital was equipped to accommodate not more than 125 patients. Additional facilities had to be built and during the war the patient load ran as high as 450 many of them billeted in a wooden annex which was torn down at the close of the war. It is estimated that this hospital was burdened with about 25% of the patient load of all naval hospitals. At the end of the war the patient load declined from a high of 2,136 in 1864 to a low of 51 in 1872.

It was customary during the 19th century for naval hospitals to have an attached cemetery. During the civil war and in later years the cemetery was the subject of controversy which continued for many years up to near the time when the naval hospital Brooklyn was decommissioned in the late 1940's. In 1869 the hospital cemetery was described as a small but tasteful graveyard which offered a quiet resting place for those who die in the hospital. Commanding officers however complained that the cemetery required a good deal of money for maintenance. In 1875 medical director Thomas M. Potter complained that the graves are all marked and we have names in the book but

very many of the headstones or rather boards have rotted off. Medical Inspector Delavin Bloodgood commented within his report to the Surgeon General in 1881:

"The naval cemetery within these grounds has been in use over 60 years. No record can be found of the interments prior to 1831 when an old roadway was closed in as an addition to the space, but since that date more than 1,100 have been registered and it is estimated that about 2,000 corpses have been buried in a little plot of about 1½ acres. Nearly every available spot has been occupied; indeed, it has several times occurred that in digging a new grave an old one has been encroached upon and parts of skeletons exhumed--so that as a sanitary measure it has long been desirable and is now a natural necessity that either some better method of disposing of the dead be devised or a plot be procured in one of the neighboring cemeteries for future internments and to which the remains here buried may be removed."

No immediate action was taken in response to Dr. Bloodgood's recommendation even though in 1892 medical director Gihone sought funds for the enlargement of the cemetery. Finally in October 1899 the Surgeon General was able to report that the capacity of the cemetery had been enlarged to accommodate 100 additional graves.

In 1902 the Surgeon General in his annual report condemned the property in strong language:

"This is a deplorable condition. (Referring to the cemetery in) It is in low damp ground on the west side of the property and is separated from the hospital grounds proper by a high brick wall, and from the neighboring property and street by a wrought iron fence much out of repair. The ground was never properly graded." Yet building continued to be made in the cemetery until 1910. In 1926 700 odd bodies were exhumed

and impaired in the Cypress Hills National Cemetery in Jamaica. The huge express extension required by the Civil War left the hospital with a fairly sizeable pay roll, which some how continued long after the patient load declined. With only 299 admissions in 1871, and a total of 346 treated, the civilian payroll for that year was \$11,336, a rather substantial total in view of the fact that the highest annual salary was \$750 and the range of wages ran all the way down to \$168 per year. For the sum mentioned the hospital received the services of one apothecary, one perveyer (a steward) one carpenter one chief clerk one chief cook and two second cooks, two washers, two chambermaids, one master at arms (at \$420), two watchmen, one engine tender, three firemen, one painter glazer, one gardner, one ambulance driver, one messenger, two gate keepers (the one at the rear gate receiving \$220 and the main gate keeper only \$360), one matron who was also required to be a seamstress. This payroll did not cover the laboratory which had a payroll of its own totaling \$6,400.

It is speculated that the ambulance driver must have been in 1871 must of had some vehicle. It is known that it was quite a decrepit affair for in 1877 the hospital accepted in substitution an old growers wagon transferred to it from the naval hospital Annapolis of which medical director Gihone was then medical officer in charge. The same ambulance was in use at Brooklyn 15 years later but was trusted only with the courage of discharged patients and supplies the navy yard ambulance being borrowed for incoming patients.

Medical Director Potter in 1876 told the House Naval Affairs Committee that the number of patients on board averaged about 50 sailors and marines--" The ordinary invalids from the different ships that come in and from the barracks that he had on his staff an executive surgeon and sometimes one and sometimes two assistants and about 18 civilian employees. A working force reduced 50%

from the war years. He explained that convalescent patients were used to make up for the lack of adequate help.

In 1833 Surgeon General T. S. Whales recommended the sale of the hospital Brooklyn saying that it is ineligibly situated for its purpose and is located upon a site with enclosures in great excess of real need and that it would bring large sums to the naval hospital fund if it were sold. Norfolk Surgeon General Wales thought would be a better spot for a hospital. During the years following the civil war until 1880's there had been a number of fraudulent dealings and graft uncovered between the personnel in the navy yard and the suppliers and ship handlers. These disclosures had resulted in influencing congress to consider removal of the yard from New York altogether. This condition may very well have influence on Surgeon General Wales thinking in the matter.

It appears there was a considerable amount of conieiving and government defrauding during the late 1860's and 1870's. Although there is no direct evidence the naval hospital Brooklyn was involved, the Congress in investigating the navy yard frauds called in staff members of the hospital to testify. In 1876 Lewis J. Williams testifying before a congressional committee disclosed that the navy laboratory was 7 months behind in paying its bills to private dealers who had supplied it with medicines and their ingredients. This was owing to lack of money in the navy hospital fund. Dr. Williams, the director of the laboratory, said that he had heard that the deficiency in the fund may have been caused by building the naval hospitals at Annapolis and Mare Island. He stated that the total purchases by the laboratory from 1 July 1875 to 31 March 1876 had been \$22,526 and that the unpaid bills outstanding was more than half that figure--\$13,383.

It may be surmised that the reason the Surgeon General had recommended the sale of the Brooklyn site was owing to the deficiency then existing in the naval hospital fund and that he was probably seeking additional funds when he pointed out that money could be realized from the sale of the site. In any event, the hospital was not sold. In 1884 however, a portion of land in the navy yard site was leased to the city of Brooklyn, with subsequently became the Wallabout market and in 1891 a tract of something over 17 acres was sold to the city for \$700,000. That market became one of the largest provision centers of the world for that time. About 2 acres of the 17 acres sold was part of the hospital complex. The naval hospital fund benefited in the sum of about \$95,000 from this sale. The market remained in existence until 1942 when it was reacquired by the navy yard for much needed expansion during World War II.

No great demands were made upon the facilities of the hospital in Brooklyn during the Spanish American War since few casualties resulted. One of the principal functions of the hospital and laboratory was the training of newly commissioned assistant surgeons. Between 1893 and 1895 17 received post graduate instruction there. During the latter years of the 19th century the average number of patients on board was about 50 most of whom were housed on the second floor of the main building.

During 1896 extensive alterations were begun to modernize the hospital facilities. This included the installation of new woodwork plumbing plastering and painting elimination of catch basins in favor of direct sewer connections the installation of electric elevators and repiping for gas so that if the electric current should fail no interruption in lighting would result.

During the several years around the turn of the century considerable maintenance work and new construction was undertaken. During this time there were many epidemic diseases of a contagious nature which included malaria epidemic catarrh measles mumps and diphtheria. As one result of the patient population rose to as many as 1,525 in 1922.

The Surgeon General in his 1902 report to SECNAV made a determined bid for support of an expansion program. He expressed dissatisfaction with the old main building complaining among other things that the ward rooms on the second deck containing two to eight beds each were long out of date both in plan and fitting. He added that the plumbing is of a kind that would not be possible to use under the laws of the state of New York in the meanest tenement. Characterizing the structure as being unsanitary he pointed out another violation of good tenement precept in the use of the basement as sleeping rooms for civilian employees. In 1903 Congress approved the change of the officers quarters into wards for enlisted personnel and also approved the building of officers quarters outside the hospital. As a result the annual report for 1904 by the Surgeon General was more optimistic:

"This hospital continues to be the most satisfactory to the bureau of all the naval institutions for the care of the sick. But even this hospital has had its capacity taxed during the past period of epidemics. The legislation of last year, whereby quarters were provided for the medical officers on duty at the hospital, outside the main hospital building and for the remodeling of their old quarters into wards will expand patient capacity." The next year the Surgeon General described the hospital as being the only naval institution comparing favorably in design on appointment with the best civilian hospitals.

The new laboratory was completed in 1905 and denominated the medical supply depot on 26 May 1905. The old laboratory building was in process of indaptation to hospital purposes and the appointments of the hospital were described by the Surgeon General as most satisfactory. However, he expressed the desire for increased capacity, particularly in the contagious disease department. The epidemics appeared to be on the decrease in 1906 when only 941 patients were treated in the Brooklyn hospital. In that year the hospital eased its burden by adopting the then revolutionary idea of treating its tuberculosis patients in tents giving them the full benefit of the open air therapy then gathering support in the medical profession.

In 1906 the patient load was up again 1,197 patients being treated in advance 256 over the previous year. This number included survivors of the catastrophic accidental explosion on the KEARSARGE in April. Most of these victims were transferred to the Naval Hospital Brooklyn. Between 1906 and 1910 the navy yard New York was one of the largest and busiest in the navy. The yard served as home port for more ships returning from overseas patients brought home from asiatic stations. 60 beds were added to the capacity of the hospital when the old laboratory building was refitted as a ward.

In 1910 a new building for the treatment of contagious diseases. The first group of female navy nurses came on board in 1909.

The outbreak of World War I in europe was marked with little activity at the hospital. During 1914 however the concern seem to be with casualties sick and wounded of the 1914 expedition to Vera Cruze, all of whom except those who could be treated as dispensary patients were transferred from USS SOLACE to the naval hospital Brooklyn.

By 1916 the national preparedness campaign began to have its effect. Three new contagious units were erected in the northwest corner of the hospital reservation each of which containing one ward and necessary equipment. Emergency hospital construction during 1916 and 17 included four hospital buildings of terra cotta stucco with reinforced concrete floors providing 272 additional beds. In October 1918 with the completion of the new medical supply depot, the removal of that activity from the hospital compound prepared the way for still greater bed capacity. The additional space however was insufficient for the number of patients on board, since development of new medical equipment such as X-ray and laboratory facilities as well as other clinical features robbed the hospital of ward spaces. In 1917 5,942 patients were admitted for treatment. There were 2,296 X-ray pictures taken and 11,562 laboratory examinations recorded. The hospital was not equipped to handle this increased burden unaided. Civilian hospitals were utilized in the task of attending to ward casualties in the sick in Brooklyn Philadelphia and New York. By 1919 despite the erection of a temporary naval hospital at Pelham Bay Park in the Bronx 48 civilian and municipal hospitals were under contract to handle the overflow. Each of these civilian hospitals was in charge so far as navy patients were concerned by of a medical officer assigned by the hospital. The cost was staggering \$423,621 for the first quarter of 1919 alone. The hospitals placed under contract extended from Swinburne Island on the south to Burke Foundation at White Plains on the north. Willard-Parker Hospital and Brooklyn's Kingstone Avenue Hospital cared for the bulk of 1918's contagious disease patients including those arising out of the influenza epidemic of that year which raised the total number of patients in October 1918 to about 3,000. Monthly admission for influenza during September 1918 were 1,137; during October 1,849. Serum was used to good effect.

Specialization was carried into other hospitals as well. New York Ruptured and Crippled Hospital handled orthopedic patients exclusively; Rockefeller Institute cared for pneumonia and syphilis patients; Brooklyn Home for Consumptives treated tuberculosis; the Burke Foundation was utilized for convalescent care. Beginning 21 May 1918 Swinburne Island devoted 100 beds to genital urinary and gynecological services which was severely overtaxed during the war. The Swineburne facility admitted 3,198 patients between Nov 1917 and Nov. 1918. The old medical supply depot was hurriedly refitted to accommodate the growing need for genital urinary services.

The hospital itself was bursting at the seams. A patient load was on board undreamed of in pre war days. By 1919 it had expanded to handle 3,000 patients in lieu of the usual 150 to 200. Administrative leave was changed to reflected in the assignment of 3 assistants to the executive surgeon charged respectively with medical, aterial and personnel activities. Aiding the commanding and executive officers on the medical staff were four regular navy medical officers five pharmacists and 70 reserve medical officers. Yoemen of the regular navy and reserve were utilized in the record office to handle huge volume of paperwork. Following the commissioning of a new galley and mess hall in 1918 the commissary department employees were increased to 39. A 200% increase over the pre war figure. The post office complement was increased from one to six.

Quarters for hospital corpsmen on duty at the hospital could not be found on the compound without reducing the space available for bed patients and accordingly a residence was rented at 218 Gates Avenue Brooklyn in which they were housed. Nurses quarters were constructed and the capacity of the Hospital was increased by the erection of a new building with facilities for

approximately 300 patients in August 1918. During the year 12 months commencing 1 Oct. 1918 24,943 sick and wounded were treated at the Brooklyn Hospital and its auxillary civilian facilities. The laboratory at the hospital performed more than 15,000 tests and the X-ray department took 5,191 pictures of 3,802 patients during the same period. The high rate of medical discharges necessitated the establishment of a permanent of medical survey at the hospital for the first time in its history. The supply problem was of large dimensions. To run a new power plant coal and oil were hauled on barges up the Wallabout Canal. A new laundry had to be built to replace the antiquated model which had been in use since early in the hospital history. Innovation in the field of transportation. To supplement the ambulances horse drawn--for the transfer of patients from and to the hospital the USS HOPESTILL, a small yacht with gasoline motors was assigned to the hospital early in 1918 as an ambulance boat to handle transportation of patients by water. Numerous breakdowns and other defects proved that the craft was inadequate. In October 1918 the USS SEAGATE a small passenger steamer was added. The two vessels with the aid of four scout patrol boats performed all the water transportation needed during 1918 and to and from the hospital supplying between the hospital and all navy ships and stations accessible by water. This small fleet proved to be indispensable in the handling of large groups of men sent to duty and in transfers of drafts to the naval hospital at Pelham Bay Park.

The Armistice brought no relief in the place of casualties of war, the influenza epidemic and evacutees from base hospitals in France and England kept the patient load at capacity. Early in 1919 the hospital was

fully occupied and in addition 2,200 patients were under treatment in civilian hospitals in the city and nearby vicinity. Despite an increasing rate of admissions, evacuation of the civilian hospitals was begun the principal measure to congestion being the transfer of large drafts of patients to other naval hospitals. Despite this effort for the greater part of 1920 the hospital was filled to capacity.

Under the stimulus of wartime casualties the hospital in 1919 started a physical therapy department, which was opened on 6 October. With a nurse and four hospitalmen who had been trained at an Army hospital for the purpose of the staffing of the department.

Between 1920 and 1923 the hospital played an active role in the exhumation program devised to return navy and marine dead buried in England and France. More than 400 corpses were exhumed and shipped to the hospital from cemeteries overseas, for reforwarding to points designated by the next of kin.

For the next 17 years until 1939 the hospital returned to the routine treatment of the sick and injured of the navy and marine corps. An increased number of retired officers and enlisted men as well as dependents presented themselves for treatment particularly in the late 1930's. A number of buildings and wards fell into disuse and the patient load fell to one half or one third of total bed capacity.

With the declaration of a limited national emergency on 8 Sept. 1939, attention was turned to the task of preparing for the emergency. In 1939 the hospital had a total of 37 buildings with floor area of 4,540 square feet and a cubic capacity of 5,454,000 cubic feet. With the aid of WPA labor these buildings were given a comprehensive remodeling and repair.

A number of wards formerly in misuse were placed back on the active list. In 1939 the care of dependents, both inpatient and outpatient was a minor one but as the navy expanded it became a major problem. By the end of World War II the dependents department had expanded to the capability of handling more than 100 patients including 55 obstetrics patients.

With the vastly expanded workload incident to World War II the hospital staff necessarily was increased proportionately. In August 1939 there had been 23 medical officers and pharmacists, 21 nurses and 138 hospital corpsmen on board to treat 400 patients. By June 1945 these numbers had been increased to 103 medical officers and pharmacists 149 nurses 426 hospital corpsmen treating 11,049 patients. In the first six months of 1945 more than 4,700 patients were admitted.

Before the outbreak of World War II a hospital corps school was established at the Brooklyn Naval Hospital. On 7 Dec. 1941 the school had 193 students under training. It occupied three wards. This school continued to operate until 31 Oct. 1942.

Early in the war the Rockefeller Institute Hospital offered 50 beds in that institution to the navy to be used for the care and investigation certain classes of patients such as those suffering from a typical pneumonia, rheumatic fever, acute and effective jaundice and enteritis. A contract between the hospitals was entered into in June 1942, and during the next three years an average of 30 to 50 patients were domiciled in the Rockefeller Institute Hospital.

The Brooklyn naval hospital would never have been able to care for the huge influx of patients had it not been for the opening of the naval hospital

at St. Albans in the winter of 1942-43, it would have been necessary to contract with civilian hospitals to take care of the overflow. When the St. Albans went in commission Feb. of 1943 there were 1100 patients quartered there.

During 1942 the staff of the naval hospital Brooklyn were involved in the planning and equipment of the new naval hospital at St. Albans. It was expected that the St. Albans facility would replace the Brooklyn hospital immediately upon its completion. However by the time it was ready for commissioning the demand for hospital beds had become so acute it was necessary to continue both hospitals in operation.

In 1943 the influx of waves patients necessitated the allocation of a substantial number of beds for their care. The district medical officer directed that all female patients in the area except those attached to the naval hospital St. Albans be admitted to the Brooklyn hospital and that all male venereal neuropsychiatric and acute contagious patients be hospitalized at St. Albans. A sharp increase in the need for dependents inpatient care during 1942 led to a contract with St. Vincent's Hospital in Manhattan for the care of patients who could not be accommodated at Brooklyn. This arrangement was supervised by the navy relief society who assisted in paying the difference in cost of hospitalization for dependents of enlisted personnel. During almost the entire war period the hospital was filled to capacity. On 11 Oct. 1943 for the first time in history the hospital had a female medical officer: LTJG Lorea M. Weber, MC, USNR. The first waves hospital corpsmen reported to the hospital for duty on 22 Feb. 1943. By the end of 1943 nearly 40% of the hospital corpsmen were waves. In 1943 the hospital was recognized by the American College of

Surgeons as maintaining an accredited tumor service. A special mission assigned to the Brooklyn hospital during World War II was that of being a center for the care of malignant diseases. For several years such patients had been assembled at the Brooklyn hospital to have the advantage of consultation assistance by the staff of the Memorial Hospital in Manhattan. Very close cooperation had been built up between the two facilities. Members of the staff of the Memorial Hospital contributed freely of their time and ability in the consultation without compensation in many cases to the care of malignant patients in this hospital. Nearly 1,000 patients, diagnosed with a malignancy were admitted and treated in the Brooklyn hospital between 1942 and the end of 1945. The skilled observation and treatment of these patients resulted in considerable contribution to the knowledge relating to neoplastic patients and has caused this hospital to develop an organization for the handling of many problems incident to the efficient care of such patients.

Extended use of sulphamades and penicillin made the management of acute infections much easier and in some instances bordered on the spectacular. The commanding officer, Captain Robertson, believed that the most effective portions of the hospital medical program were: 1) organization and development of the malignancy service; 2) expansion of outpatient department and inpatient care of dependents; 3) the establishment and development of the rehabilitation program; and 4) the establishment and development of the education program. He noted that the most difficult obstacles were the lack of sufficient space and personnel to examine and treat the huge number of dependent patients eligible for both inpatient and outpatient care.

Following the war, in 1946, it was tentatively decided to disestablish the Brooklyn hospital as of 1 Jan. 1947. While simultaneously treating the patients remaining the role of schedule was followed until 1 Oct. 1946 at which time the authorized bed capacity was established at 700, and at that time disestablishment was held in abance. At the end of 1946 the number of patients on board was 528. The hospital continued to be the main center for the treatment for cancer and allied diseases in conjunction with the Memorial Hospital.

The Brooklyn Naval Hospital continued in operation until it was disestablished effective 30 June 1948.

CAMP LEJEUNE, N.C.

The Naval Hospital, Camp Lejeune, N.C., is located on Hadnot Point on the east bank of New River. The hospital reservation consists of 144 acres, bordered on the north by Wallace Creek, on the west and south by New River and on the east by the Marine Corps area. The hospital was constructed in support of the Marine Base, Camp Lejeune.

About 135 acres of the hospital reservation are firm land, including some 35 acres of lawn. The remainder is marsh land and there is a wooded area extending completely around the hospital reservation. A link-chain, metal fence 8 feet high, extends across the base of the point separating the hospital grounds from the Marine Corps area. The nearest town is Jacksonville, approximately 15 miles away, with a population of about 3,500.

The hospital project was started in July 1941 to provide medical support for the Marine Corps training activities. A projected bed capacity of the hospital was 500 beds. The facility was designated and established as a Naval Hospital 20 January 1942. Construction of a 1,000-bed brick hospital was not completed until 1 May 1943, when it was commissioned. CAPT J. F. Riordon, MC, USN was the first medical officer in command. At first, the hospital was designated U.S. Naval Hospital, New River, N.C., but on 1 November 1944 the name was changed from New River to Camp Lejeune.

Originally there were 42 brick and 37 wood, frame buildings on the reservation and a number of huts. The main hospital building is 3 stories in height surmounted by a tower and faces toward the south. The main building consists of a rectangular central portion 225 feet long with wings extending east and west. Each wing consists of four two-story, double ward buildings extending to the north and south of a central corridor, connecting

with the main building. An L-shaped wing extends to the rear of the central section, accommodating the galley, mess halls, ships service activities, theater, X-ray department, physical therapy spaces, a fracture room and the surgical suite with three operating rooms. The family hospital is a two-story brick T-shaped building with a frontage of 225 ft. It is a complete hospital in itself with a capacity of 55 beds, 36 bassinets, an incubator and 6 children's beds. Living accommodations on the hospital reservation include quarters for 22 married officers, 2 civilian employees, 38 bachelor officers, 88 nurses, 112 enlisted men and 112 enlisted waves.

The hospital has a capacity of 1,178 beds most of which are in closed wards. The emergency capacity is more than 2,100 beds. The peak census of patients reached during World War II was 1,827.

There are no large cities within close proximity to this hospital, requiring a capability of the hospital to care for every possible type of patient. During World War II, the hospital served as the Navy facility for the delivery of health care to the Marine Corps Air Station, Cherry Point, as well as the Marine Corps Base, New River.

CAMP PENDLETON, CALIF.

The Naval Hospital, Camp Pendleton, exists to give medical support to the huge, sprawling Marine Corps base at that location.

The first known visit to this area by white men was in 1769, when Don Gasprede Portola, Father Serra and a party of 63 left San Diego for Monterey, Calif. Enroute they camped in a green valley which they named Santa Margarita, for the martyred Saint, whose day it was, and which today is part of the 125,000 acres which made up Camp Pendleton.

The area remained sparsely populated until late in the 19th Century. In 1882, the property was acquired by a Mr. Jerome O'Neill. O'Neill built a dam and formed a lake which remains, and which bears his name. He introduced irrigation and began raising successful crops as well as cattle. Evidences of the rancho remained throughout the camp today. The Navy purchased the land in 1943 at a total expenditure of \$4 million dollars. It was and still is used as a vast training area for the Marine Corps.

To support this base, a naval hospital was established, in 1942, overlooking Lake O'Neill although it was not commissioned until September 1943. At that time it was known as the Naval Hospital, Santa Marguerita Ranch, Calif. The original hospital was a sprawling one-story complex of approximately 90 buildings.

From the town of San Clemente, on the north boundry of the camp, the property extends along the coast of Southern California for a distance of approximately 20 miles to the town of Oceanside lying on the southern boundry. It is at Oceanside that the main entrance to the camp is situated.

The property extends inland for a distance of 8 to 10 miles. The eastern boundry extends along the Cleveland National forest in the coast range. The camp has adequate railroad and highway transportation. A wide variety of terrain types, ranging from beaches along the coast to mountains with an elevation of 3,000 feet, makes this area an ideal area for use in training for combat operations. There are rolling hills wooded valleys, plains, cliffs, and river beds to provide all types of terrain to train troops in all types of warfare.

The Camp is named for General Joseph H. Pendleton, a former Commandant of the Marine Corps. It was originally planned for accommodations of approximately 20,000 men, but this was later increased to more than 40,000.

During the height of World War II, the medical activities of the camp, in addition to the hospital, consisted of 19 dispensaries and one first-aid station with a total bed capacity of 222. The dispensaries were wooden buildings of semi permanent construction, each complete with surgical, dental, laboratory, pharmacy, diet kitchen and office spaces. In addition to the scattered dispensaries and the hospital, a field medical school was established during World War II. The purpose of this school is to train medical personnel, destined for Fleet Marine Force duty, in the mechanics of Marine Corps organization, tactics, field medical equipment, field sanitation, and other medical responsibilities in the field.

The hospital was originally rated at a 600-bed capacity but during World War II it expanded to more than double this size. At the end of the war, the authorized bed capacity was reduced to 200, and there was discussion relative to the disestablishment of the hospital. Early in 1947,

a decision was made to maintain the hospital in an active status. When the Marine Corps established Camp Pendleton as its principal training center on the West Coast in mid 1947, the bed capacity of the hospital was raised from 200 to 300. This complement was reduced to 250 in January 1948. Discussions continued as to the advisability of closing the hospital, in 1948, and throughout 1949. With the decision to close the Naval Hospital, Long Beach, in February 1950, however, the closure of the Naval Hospital, Santa Margarita, was again abandoned. This hospital remained the closest hospital to the fleet activities in the Long Beach/San Pedro area. As a result of the closing of Long Beach, a request was made to increase the capacity of this hospital to 850 authorized beds. With the necessary build up and training of troops for the Korean conflict in 1950, the activities of this hospital increased materially. These activities have been continued ever since. Since the late 1940's, considerable activity has been necessary in the treatment of dependents as well as active duty Navy and Marine Corps personnel.

On the drawing board since 1967, has been plans for the construction of a new permanent hospital to replace the temporary buildings built during World War II. A reassignment of 90 acres adjacent and north of the existing hospital has been made by the Commandant of the Marine Corps. A new multi-story structure is now under construction (1971).

CANACAO, PHILIPPINE ISLANDS

The Naval Hospital, Canacao, was constructed to provide medical support to the Fleet in the Philippine Islands, following the Spanish-American War.

This hospital was built on a site used by the Spanish for the same purpose. Little documented data are available prior to the 1860's. There is evidence, however, that about that time a facility was provided and used jointly by both the Spanish Army and Navy. That hospital was administered the auspices of the Catholic Sisters of Charity, after 1874. The hospital at that time consisted of a ward for European patients, a Sisters Home and a ward for native patients. Storerooms, a casino, a recreation room for officers and men and a small barracks for the guard detachment along with necessary commissary and service buildings completed the hospital complex. These facilities were located near the site of the later erected U.S. Naval Hospital.

After the capture of Cavite Navy Yard in 1898, the 400 Spanish patients and the Sisters were transferred to Manila where they were accommodated principally in the Concordia College. The old hospital buildings were not used by the Navy Medical Department to much extent until about 1905; instead, Navy and Marine Corps sick were accommodated in a small hospital-dispensary in the Navy Yard proper. One of the reasons for not using the old Spanish hospital was the unsatisfactory and wholly inadequate water supply as well as the inadequate ward facilities. The Spanish had obtained most of their water from rainwater collected from roofs after rains. This water was stored in an old cistern. During the

dry season, water was obtained in Manila and brought to Cavite by water barge. With the occupation of the hospital buildings by the United States, artesian wells were dug affording a safe and ample supply of water throughout the year.

In 1905, the old hospital was modernized and equipped under the command of Medical Inspector C. T. Hibbet and officially placed in commission as a U.S. Naval Hospital. The old Spanish chapel was converted into an administrative building and officers quarters; other structures were either erected, remodeled or improvised from structures available. During its early days as a naval hospital, medical attention was given to officers and men of other navies. The death register reveals that three sailors from Russian ships were interred in the adjacent Navy cemetery which also contained the remains of several Spanish soldiers and sailors. A native clinic was established soon after the establishment of a naval hospital, a practice officially recognized by BUMED. The service was greatly abused and led to its abolishment in 1924, at which time Filipino medical facilities were considered ample to care for current requirements.

The construction of a new hospital group of buildings was authorized in 1925 and the work was completed in 1926. These buildings were constructed of reinforced concrete with asbestor shingle roofing, steel roof trusses and window sashes and concrete and tile floors. The foundations were designed to be earthquake proof, though prior to 1941 none occurred to test their efficiency.

The main or administration building was three stories in height and of sufficient size to care for any contemplated expansion. In addition to administrative offices, the main building contained the clinical services all of which activities formerly were scattered about the compound in small detached frame buildings. The surgical operating suite was on the third floor of the main building. Prior to World War II, the Naval Hospital, Canacao, was considered to compare favorably with any similar institution in the Orient. The patient load in the weeks preceeding 7 December 1941, averaged about 240.

There were rumblings of war for many months prior to the attack on Pearl Harbor. The Army and Navy commands in the Philippines, did not think it likely that the Japanese would attack before April or May of 1942. However, as early as November, it became a practice in the hospital complex to make preparations for possible war. In general, for several weeks preceding 7 December, it was customary to extinguish all unnecessary lights inside the buildings and black out condition No. 1 was in effect.

It was Monday morning, 8 December, at approximately 0130 in Canacao, when the Japanese attacked Pearl Harbor. There is no indication from the official hospital log, that the medical officer of the day was even awakened when word was received in the Philippines that the Japanese had struck Pearl Harbor. A postscript note following the entry at 0835 observes the event laconically "hostilities exist as of today".

LTJG B. B. Langdon, MC, USN was the medical officer of the day.

Activity started in the hospital soon thereafter. At 1000, a note in the O.D.'s log indicated the medical supply depot, a subordinate command of the naval hospital, was being evacuated. At 1100, gas masks were issued

to all staff and patients. Gas masks drill and instructions were given during the day. Monday night, at 2216 a false air raid alarm was sounded. At midnight all lights, with the exception of a shaded light in the post office and in the power house, were extinguished. Early Tuesday morning, 9 December, at 0310, an air raid alarm was sounded; secure was not sounded until 0610.

In preparation for a possible attack, 62 patients were discharged on Monday and preparations were made to discharge or evacuate the remaining 198. Discharge and evacuation of all patients was completed by 1230 Tuesday. Patients not physically able to be sent to duty were transferred to Army hospitals in Manila. Tuesday night, no less than 5 air raid alarms were sounded, all of which proved to be false. The war began for the Naval Hospital, Canacao, at 1235 Wednesday, 10 December, when the Cavite Navy Yard was bombed. The air raid lasted 1½ hours. During and following the raid, more than 350 casualties were received from the Navy Yard. The surviving medical department personnel from the Navy Yard were added to the hospital staff.

It became manifest that the hospital location was untenable. At 1900 Wednesday, 10 December, evacuation of the injured patients received from the Navy Yard began when they were transferred to the Army hospital in Manila. This was the Sternberg General Hospital. The Philippine Union College on the outskirts of Manila was occupied by the Navy Hospital staff as a new location, for a hospital. This marked the end of the Naval Hospital, Canacao, but elements of the staff continued to maintain a hospital, first at the Philippine Union College, followed by a move to the Santa Scholastica College. When the Japanese occupied Manila, the staff was made prisoners of war. The remaining members of the staff were then transferred to the Bilibid Prison in Manila. This final move was made

in May 1942. For the next three years until February 1945, the hospital staff functioned as a naval hospital in the Bilibid Prison under the control of the Japanese. Most of these medical officers, dental officers, and hospital corpsmen considered the Bilibid facility merely an extension of the Naval Hospital, Canacao.

After the war, the Canacao facility was not reestablished.

CHARLESTON, S.C.

Navy medical treatment facilities have existed in ships and probably in shore facilities to the fleet for as long as the United States Navy has existed. Charleston has always been an important port for units of the fleet.

No major medical facilities were established there, however, until in 1902, when the Navy Yard was authorized. In the early years of the Navy Yard, Medical Department personnel occupied hospital tents within the yard. In 1905, a sick quarters was erected and functioned for the next several years. The central portion of the main hospital building, occupied until 1942, was authorized in 1906 and completed in 1909. It was designated as a Navy Yard Dispensary. It was a two-story structure, erected on brick piers. Later a basement was constructed under the building, which functioned as a dispensary and as a small hospital; however, many of the patients were cared for in tents. In 1917, a west wing was added to care for the influx of patients during World War I. Thus a temporary 1,000-bed hospital was erected in the northwestern section of the naval reservation. Commander W. M. Garton, MC, USN was the commanding officer during construction and until July 1919.

In 1922, the 1,000-bed hospital was no longer needed and medical activities were returned to the Yard Dispensary. This facility provided beds for only 68 patients. Although a new wing was added, in 1936, it still was far from adequate with the vast expansion incident to World War II.

When the temporary hospital was abandoned the navy dispensary was designated as a naval hospital. The present hospital, constructed on the site of the 1,000-bed hospital used in World War I, was commissioned 13 April 1942, with a bed capacity of 650 patients. The main building was constructed of concrete and concrete blocks and is a two-story structure enclosing a central part. The administration building faces northeast; its east and west wings have a frontage of 677 feet. To the east and west of the central part are four ward buildings and the subsistence buildings complete the enclosure of the park on the north. During 1942, the hospital was enlarged by the addition of 10 single-story, wooden buildings to serve as wards. Including quarters the hospital complex consists of 38 buildings of which 23 are permanent construction.

CHELSEA, MASS.

The history of the naval hospital Chelsea parallels the history of the United States of America. Indeed, this hospital, and particularly the site upon which it is located antedates the Nation itself.

The area in Boston known as Chelsea, originally was known as Winnissimmet Summit, and was the site of the first-known permanent settlement in Boston Harbor about 1624-25. In the early days of the Massachusetts Bay Colony, a deed from the original owners--the Indians--was obtained from the descendents of Sagamore George, the last of the Indian chiefs. This deed describes a farm of 120 acres, more or less, lying at Winnissimmet Summit, conveyed to Elias Maverick and his brother. The Winnissimmet Summit site was the landing point in the 1630's for a ferry boat which took passengers across the Mystic River to Boston and Charlestown.

The site, now occupied by the hospital and the surrounding area, was then all farmland. Rising 112 feet above sea level, the hospital overlooks the Mystic River and historic Charlestown. It is said that from this vantage point, women and children of Chelsea and the surrounding countryside, gathered to witness the battle of Bunker Hill, 17 June 1775. After the battle, many of the wounded were taken across the river by boat and beneath lofty elms that shaded what is now the hospital grounds, the women dressed the wounds of the wounded soldiers. Thus it appears the site was destined to become one for use by a medical people.

The site upon which the Naval Hospital now stands was acquired in 1823 by the Commissioners of Naval Hospitals from a Mr. Aaron Dexter. The site purchased, consisted of 115 acres and was acquired at a cost of

\$18,000. Owing to the dangerously low condition of the Naval Hospital Fund, however, Congress did not approve the construction of the hospital at Chelsea until 10 July 1832. Construction was begun almost immediately, thereafter, but owing to the lack of funds the work progressed slowly. It was not until 7 January 1836 that the hospital was completed and placed in commission.

The hospital was constructed of Vermont granite on a foundation measuring 149' x 71', and was three stories in height. It had a bed capacity of 100. Since 1836, the hospital has been in continuous operation. It is the oldest naval hospital, still in service, that has been in operation, continuously. In 1865, a wing was added to the original structure.

In 1884, Congress proposed to sell the hospital and grounds and erect another hospital on one of the island in Boston Harbor. This proposal was defeated, largely as a result of the opposition of the Surgeon General, who pointed out the hospital was built and maintained by the Navy Hospital Fund and was not public property. During the Civil War and the Spanish American War the hospital necessarily was greatly expanded by the erection of temporary buildings and particularly by the use of tents erected and utilized as wards. A new and much larger hospital was completed further up the hill from the original hospital building and was occupied 24 April 1914.

In 1880, Medical Director W. T. Hord reported that of the original 115 acres about 30 had been transferred to the Ordnance Department for magazine shell houses and gunnery houses; an additional 10 acres were sold to the Treasury Department for the purpose of erecting a Marine Hospital.

Only about 75 acres of the original tract now remains as Medical Department property. Dr. Hord pointed out it was the only naval hospital on the Atlantic coast absolutely free from malarial poison. As a consequence, patients with malaria often were transferred to Chelsea from Pensacola, Norfolk, Washington, Philadelphia, and New York for treatment. At that time, not only did the Naval Hospital, Chelsea support Navy activities including the Navy Yard, Charlestown, and ships visiting Boston, but also supplied accommodations for the sick from the Portsmouth, N.H. Navy Yard.

Dr. Hord reported that the people of Chelsea seemed determined to obtain possession of the Government property on the side of the Mystic River, occupied by the naval hospital. He pointed out that the city of Chelsea did not require the land because of natural growth of the town, but they wanted it so that they could tax the property and add to the revenues of the town which at that time was overwhelmed with debt. He parenthetically noted that the tax rate was \$19.80 upon \$1,000. The community of Chelsea suggested sending invalids of the Navy to the Marine hospital and the civilian hospitals of Boston. Dr. Hord was adamant in his belief that the great Government of the United States would never farm out its sick and wounded officers and sailors to the lowest bidder as country towns do with their paupers. He further pointed out the Marine Hospital to which it was suggested that the Navy patients be sent was unfit for the purpose.

Dr. Hord described the climate of Boston as being variable in winter, the thermometer rising and falling 40 and 50 degrees in Fahrenheit in a few hours. The prevailing diseases during the summer months were gastro-intestinal; during the winter months rheumatism neuralgia and inflammation

of lungs and air passages predominated. The death reports of the city of Boston showed during the winter and spring months the number of deaths from consumption and inflammation of the lungs and air passages amounted to more than 1/3 of the total mortality. Typhoid fever was prevalent, caused by close proximity of the wells and water closets to habitation. The climate is so cold that the well which supplies the families their drinking water is under the kitchen and the privy but a few feet from it.

Dr. Hord expressed the opinion that the great prevalence of consumption in New England was owing to the meager diet that prevails in all classes of society--a wholesome generous table being the exception, even among those who are in good circumstances. In 1892, Medical Director Cleborne, Commanding Officer, reported that there had been 190 patients treated during 1891. Only 1 death was reported for the year with 156 returning to duty and 19 patients invalided from the Service. The daily average number of patients for the year was 17. The average cost per patient including costs of repairs and all expenses of the hospital, was \$1.93. The total amount expended for all costs of maintaining the hospital was \$12,706.79.

Dr. Cleborne described the state of repair of each building in the hospital complex, many of which needed extensive repairs or replacement. Particularly notable was his description of the "old barn" which he said was so decayed that it is beyond repair and may at any time fall down. This building, he said, should be pulled down and replaced by a shed or structure fitted for the reception and protection of carts, wagons, plows, and other agricultural implements of the hospital. It was customary in

those days for hospitals to supplement the commissary provisions by maintaining a garden plot from which many fruits and vegetables were furnished to the general mess during the growing season. Many hospitals had cows for the production of milk and all had horses to provide locomotion for carts, wagons, and ambulances.

In 1893, Dr. Cleborne noted with pride that the "old barn" had been pulled down and replaced. A new two-story and attic barn 50' x 27' x 21' had been erected adjoining the barn, giving ample storage room for agricultural implements, farm wagons, plows, hay rakes, etc., and could even be used for a pest house in case of an epidemic. The barn was set on a foundation of brick pillars in the front and on a solid wall of stone and cement behind; and the piggery had been lengthened nearly 20 feet by extending it to the new barn. The piggery yard was increased in length and extended backward toward the farm embankment. The old drain was opened up, cut deeper and drained into the main blind conduit near the dead house. A good road and footpath were made, extending from the hay barn to the end of the piggery fence. The hay barn was thoroughly overhauled, its rotten sills removed and renewed and new floor put in; the entire basement was gutted, the floor graded and drained and the flooring under the stalls were concreted with 4 inches of rosendale cement and graded so as to let all water run toward a central drain which was carried into the cow yard. Dr. Cleborne was particularly pleased with these improvements and noted with pride that all of the work had been done by hospital employees in a very creditable manner.

Dr. Cleborne made a special plea for improvement in the hospital employees including the recommendation then current among Navy medical officers for the establishment of a Hospital Corps and for the provision

of trained nurses. He particularly pointed out that other employees are almost as important as the sick attendants; cooks, messmen, ambulance drivers, firemen, etc., contributed a great deal to the efficiency, comfort and welfare of the sick. He suggested they should be a carefully-selected group and these people should be made subject to the discipline of the hospital. Such employees, he said, could not under present arrangements be obtained but there were a good many men now on the payroll who could be chosen for these purposes and would be glad to enter the hospital service on a more permanent footing. He recommended the enlistment of a limited number of men for special service at hospitals who could be enlisted as hospital-orderlies at the rate of \$15.00 per month and then, if found qualified, be rated as baymen, cooks, firemen, etc. He suggested that these employees thus rated should receive the pay of similar ratings in the Navy and during satisfactory performance of their duties should be retained; but if found unruly, drunk or otherwise unfit for the Service they could be discharged or disrated like other enlisted men. He pointed out that under the present system, dismissal was the only way of getting rid of drunken, inefficient or disobedient personnel, but noted that this was a very unsatisfactory method and not always advisable, agreeable or convenient.

He pointed out that by enlisting men under the generic term of hospital orderlies they could be employed as watchmen, laborers, mechanics or for whatever purpose they were best fitted without giving them an apparent claim for Navy Yard rates of pay. He suggested that there were undoubtedly many on the civil payrolls who would prefer to enlist for one year and by

so doing be assured of a place for that length of time rather than to be employed by the month subject to change. In 1894, Dr. Cleborne complained about some of the complaints of his junior medical officers. It appears some of them were bemoaning the fact that the hospital had few "interesting cases." These medical officers wanted to be transferred to the Brooklyn hospital which had a higher patient load and a greater variety of medical conditions, or to one of the Navy's new cruisers. Dr. Cleborne noted:

"It is a pity that this craving for strictly professional work can not be gratified at all naval hospitals, but it is still more unfortunate that the professional enthusiasts who only find dust and germs under a microscope are so indifferant to germs in the dust and dirt of closets and dark corners of garrets and attics, under beds and furniture, and on floors, walls and cornices of which they appear to be utterly oblivious. When less professional work is left to subordinates--nurses and apothecaries--and officers give greater personal attention to their duties, we shall hear less complaints about nonprofessional work and the details of hospital organization or administration, discipline and regulations--of which too many officers are so lamentably ignorant."

Dr. Cleborne complained about the high cost of the gas bill and proposed the installation of electric lights in the hospital. He noted, however, that since both the gas company and the electric company were monopolies that it would be greater economy to install a power plant of its own in the hospital rather than getting service from the local power company.

In the annual report for the year 1897, the commanding officer noted that the underground electric system, installed in the latter part of 1894, was poorly installed and has been a source of frequently recurring annoyances. It was noted that the original contract provided for the maintenance of the electric system in a good working condition for 5 years, an obligation the contractors had failed to live up to. It was pointed out that in the past year the system had failed to furnish light to the outside lamps, of which there were 20, on 237 nights. Electric lights have failed to burn in the buildings 162 nights. The inside lights depend on the supply of power from the Chelsea Gas and Electric Company, but after frequent temporary repairs, the outside lights usually went out with the first rainstorm.

The workload, in 1898, increased almost five fold owing to the Spanish-American War. Most of the patients received, however, were returned to full duty. During World War I, the capacity of the hospital was expanded to 1,142 beds by erection of a series of temporary wooden ward buildings on the sloops to the westward of the main building and on the flats at a point of land near the waterfront. At the beginning of World War II, the hospital reservation consisted of 31 buildings of which 13 were of permanent construction. In 1942, five temporary ward buildings were erected on the sloops north of the main building and, in 1944, a group of five temporary ward buildings, with their own subsistence building, were built on the flats near the river adjacent the World War I buildings. In 1942, the Public Health Service Marine Hospital, located immediately east of the hospital reservation, was reacquired and its buildings utilized chiefly as barracks and living quarters. At the end

of World War II, a dependents' hospital of 130 beds was completed and 7 of the temporary ward buildings on the flats were converted into quarters for married enlisted men. At wars end, the hospital had a capacity of 442 beds in permanent construction and 130 in the dependents hospital. The dependents building also included 17 cribs, 39 bassinets, and 6 childrens' surgical beds. Living accommodations at the hospital include quarters for 14 married officers, 17 married enlisted men, 1 civilian employee, 80 nurses, 239 enlisted men, 27 Waves, and Marine guard of 25.

The peak census of patients reached during World War II was 2,866.

During World War II, even after the construction of temporary ward buildings, it was necessary to seek additional beds elsewhere. The so-called Fenwick Annex, downtown, was utilized for this purpose. In the Fenwick Annex only convalescent patients were cared for. Many convalescent patients were transferred to the Navy Special Hospital at Springfield, Mass.

There were rumors in the late 1950's that the hospital might be closed and relocated elsewhere. Thus rumors were somewhat laid to rest, however, in the middle 1960's when the shore development board recommended the construction of a new high rise hospital of modern design on the hospital grounds. In June 1966, the House Armed Services Committee approved an appropriation of \$9,300,000 for the beginning of this project.

In May 1968, the Naval Hospital, Chelsea was honored by an expression of the appreciation of the city of Chelsea by the Board of Alderman of that city. The Resolution read in part:

"Whereas, the Naval Hospital has been located in this city for several generations and been of measurable service to the men and women serving our country in wartime with the finest medical staff and facilities, and

Whereas the naval hospital has also been in full operation in peace time to provide care for the victims of naval disasters the sick and providing for the rehabilitation of those wearing the uniform of the Armed Forces, and

Whereas, the naval hospital has been an integral part of the city of Chelsea, providing employment to many local people and its personnel and patients utilized, wherever possible, our business establishments and friendly relationship exists between the officials of this outstanding institution and the city government, therefore be it

Resolved, that the Board of Alderman go on record publically expressing its appreciation to the naval hospital for its service and helpfulness to our nations servicemen and for its being a vital part of Chelsea."

On 6 November 1969, an OPNAV NOTICE 5450 redesignated the Naval Hospital, Chelsea as Naval Hospital, Boston, Chelsea, Mass. This name change was made in accordance with recommendations suggested by many to more nearly identify this hospital, geographically. This is the third official title of this naval hospital, it being known originally as the Navy Hospital, Charlestown. This designation, of course, was misnomer since Charlestown Navy Yard is across the Mystic River from the hospital.

The Naval Hospital, Chelsea has a unique facility envied by hospital corpsmen everywhere. This is the hospital Corps Club which stands as a fine tribute and a lasting memorial to the men of the Hospital Corps and erected for them by the Knights of Columbus. The club was formally opened 4 May 1920 and occupies a prominent position on the hillside near the main hospital. It was built of red brick and housed a complete gymnasium, swimming

pool, club room, lounge, library, showers, dressing room, and billard room.

The club is organized as a social unit with a constitution and bylaws. The club members regulate the care of the building and the conduct of the members. Two bronze plaques placed in the entrance hallway read:

"Erected and equipped by the Knights of Columbus with funds freely contributed by the people of the United States for the men of the Naval Service during the World War."

the other plaque reads:

"This building is given by the Knights of Columbus to the men of the Hospital Corps of the United States Navy as a place of rest and relaxation and as a memorial. To those who during the World War worked faithfully, unselfishly and in many instances made the supreme sacrifice in relieving the sick and wounded in restoring the wounds of the camps and hospitals and on the firing line both at home and over there."

In 1879, Medical Director Joseph Wilson reported on the medical topography and sanitary condition of the Naval Hospital Chelsea, Mass. The naval hospital, he said, is located on one of the arms of Massachusetts Bay two miles north of the State house. He described the region as being of granite headlands. In addition to the granite hills, there are many hills composed of transported material.

The ice and water are still bringing material; mud and gravel from the hills are deposited by the tides building up many broad, marshy meadows and islands. The marshes produce saltwater sledges and when not interfered with by too much mud from the river, large bodies of peat form from the

accumulated remains of such vegetation. The land occupied by Boston is reclaimed from its hills and such marshes. Perhaps two thirds of the land now occupied by buildings was originally a sedge marsh.

Dr. Wilson described the city of Boston as having no plan, not even a cow path of the Knickerbockers. It was built and is now being built on the independence plan; each man designing a house for himself, locates it pleasantly on a hill with elegant prospects with the sedge marshes lending distance and enchantment to view. A number of houses thus enjoyed these fine prospects but need for a road existed which was accordingly made winding down the side of the hill. Then more persons built houses and roads till the hills are densely occupied and the increasing population had no alternative but to take to the marshes.

But Dr. Wilson pointed out that the marshes cannot be occupied until filled up somewhat. Nature had provided sufficient material in the hills but the taste for fine prospects and landscape gardening cuts out this resource. Prospects have vanished with the crowding but the hills are covered with valuable houses so that the marshes are slowly and inefficiently filled with ashes and rubbish. Clay and gravel are too expensive for such use.

Railroad companies transport materials long distances occasionally to fill up some parts. The road makers in their search for the less slimy parts of the road have made some curiously crooked streets.

The sanitarians of Massachusetts have traced the high death rates in some of the cities to pulmonary consumption, typhoid fever, diphtheria and cholera; they have attributed these destructive diseases to dampness,

mainly the dampness of the soil arising from insufficient drainage of flat portions of the city. The proximate cause of the high death rate of 25 to 30 per thousand is excessive crowding, with about half enough houses on insufficiently drained land; the remote cause is the taste for fine prospects and landscaped gardens. The suburbs of Boston with their fine prospects and well kept grounds are not equalled anywhere on the face of the earth.

Massachusetts, at that time, had a State Board of Health with one civil engineer as a member; let us have a Board of Surveys with one physician on it, demanded Dr. Wilson. One of the first duties of this new board would be to lay out a few straight parallel streets, due east and west from Boston harbor to the Connecticut river. These streets, to be useful, must be regarded as master streets controlling the direction of streets and the style of improvements everywhere. The master streets with their cornerstones and grades, all indicated on proper maps, with the understanding that those streets adjoining would parallel streets to be opened as needed and the interferring streets and country roads should be vacated as fast as city improvements reach them. This would enable landscape gardeners to enjoy the fine prospects without much envy and would help the rising generation.

The land on which the naval hospital was located consisted of a round hill 110 feet high with steep sides. The hospital building, fronting the river, is on the south slope of the hill. Thus there is a good supply of sunshine with westerly breezes from the river and an efficient protection from northeast storms. The marsh at the foot of the hill, Dr. Wilson said, seems to do us no harm; the summers are so short and cool that there is no indication of malarial disease in this latitude.

The main building is a parallelogram 148' x 70' with a pyramidal roof. It consists of three floors besides the cellar and the attic. The first or ground floor contains the entrance hall, the dining room and the offices. The second and third floor contains the wards most in use. There is, on each floor, a corridor running the whole length of the building giving access to the rooms on each side and connecting with the entrance hall by a stairway.

The wards, of which there were four on the second floor, were approximately 23' x 26' and accommodated 8 beds. In those days, the medical officer and his assistant generally were provided with accommodations within the hospital building. These accommodations usually consisted of two or three rooms at the most.

In 1879, and generally in that period, ventilation of the hospitals was given considerable attention. Dr. Wilson described the ventilation of Chelsea as excellent with special flues in the partition walls, not connected with chimneys, with provided means for increasing the circulation of the air within the apartments. Considerable attention was paid to minimum amounts of cubic air space per man in any quarters ashore or afloat. Particularly, this was true in the case of hospital facilities. This emphasis on cubic air content for men and the nature of that air was of great importance to the medical community in those days since they attributed many diseases and disease conditions to the condition of the air.

The smallpox hospital was about 300 yards west of the main building

and also ventilated by openings in the ceiling into the loft thus establishing a foul-air chamber. The heating of the main building was accomplished by high pressure steam. Steam was generated in the boilers which were located in a detached building; the boilers supplied power for the washing machine and steam pump in addition to warming the rooms. There was sufficient steam for the coldest weather. The arrangement of the boilers in a separate building was considered to be wasteful since the steam condensed in the main pipes before it reached the rooms to be warmed. This inconvenience had been remedied to some degree by covering the pipes with nonconductive materials. Several of the rooms were warmed by a single steam coil in each room. This would have been satisfactory if it could be possible to have a moderately warm coil by partly opening a valve, but according to Dr. Wilson's experience, this was not practical.

In mild weather the house was inconveniently warm and if the windows were opened coal was thereby wasted. Attempts were made to remedy this by turning on steam until the houses was quite warm; then the valves were off until the rooms were rather cold; then the steam was turned on again, and so forth. The remedy suggested was to have two or more coils of different sizes in each room; in mild weather it would be possible to heat the small coil and in cold weather a large one; in very cold weather both coils could be used at the same time.

The hospital was well lighted by large windows. Physiologists had not yet suggested any means of determining the amount of light required for the best conditions of health. The dwellers in the crooked lanes and alleys of large cities appear to suffer from a deficiency of light;

but the vigorous health of men working in dark mines suggests some doubt. Persons who visit Egypt with its white sands and bright sunshine suffer from too much light even to the destruction of their eyes. The direct rays of the sun are painful to us as at present constituted. We need clothing to protect the surface of our bodies and we need hats to protect our eyes. Darkness gradually destroy life and too much light may destroy still more rapidly. It has been suggested that the two long sides of the hospital ward should have the windows opened to the sunlight. The windows of the wards of this hospital are all on one side and at the ends. On the other side is a partition wall with its three doors opened to ventilation and flues. There are no balconies to obstruct the light and on bright days it is necessary to darken the wards by closing the blinds and curtains.

The water supply was derived from the Mystic river and it was abundant and good. The purity of snow water varies according to the circumstances of collecting it. The water of the large cistern in the cellar is about as pure as snow water and by the soap test it appeared to contain about one third as much calcium carbonate as that in the water from the Mystic basin. The deep well, long disused, contained excellent drinking water, though it was not as good as that from the Mystic for washing clothes. The Mystic basin commonly supplies a good water but on three or four occasions it was hardly fit for use. The breaking up of the ice in spring, filled it with mud and organic fragments in addition to a large quantity of nitrogenous impurities in solution. The water of the spring was excellent. The condition of the water from Saugus Lake warns us that rivers and lakes of some size may be defiled by draining

filth into them. The water from the laundry drain, settled and filtered, was a pretty strong solution of nitrogenous impurity from soiled clothing.

Chelsea disestablished 28 June 1974.

CHERRY POINT, N.C.

This facility first designated as a naval hospital 1 July 1968. Prior to that time it had a station hospital status. The medical facility was established early during World War II for the medical support of the Marine Corps Air Station at this location. For several years the medical facility functioned as a dispensary and many of its long-term patients were transferred to the Naval Hospital, Camp Lejeune.

The first Commanding Officer of this hospital, since its designation as a naval hospital was CAPT A. P. Rush, MC, USN. The hospital provides support not only to the personnel on duty at the Marine Corps Air Station but also provides a large dependents service, including a pediatric and obstetrics department. Tentatively planned is the construction of a new 75-bed hospital, scheduled for construction during 1973.

COCO SOLO, CANAL ZONE

This hospital was commissioned 1 September 1942, as a 200-bed hospital. Later, in 1942, four ward buildings with 142 beds were added.

The hospital had been planned for several years but did not become a reality until 17 December 1941 when an Executive Order set apart 39½ acres in the Canal Zone for a naval hospital. The land was located along the transisthmian highway, adjacent France Field (Army Air Corps). It was bordered on the southwest by the Rio Coco Solo, on the northeast by Cativa road and faced the highway. Construction began almost immediately after authorization and the hospital was commissioned under the command of CAPT G. B. McArthur, MC, USN, 1 September 1942. Construction of the hospital and accessory buildings cost \$1,923,000.

The first patients were admitted 22 December 1942. On 18 March 1943, Captain McArthur, died suddenly and CAPT Oscar Davis, MC, USN, assumed duties as medical officer in command. Throughout World War II, the hospital provided support to the Naval Operating Base, Coco Solo. Between 1942 and the end of World War II, more than 3,000 patients were cared for in each year. In 1945, a dependents service was established, with a capacity of 25 beds. The highest census during the war was reached in 1945 when 366 patients were on board. The patient load rapidly decreased after the war and in the early 1950's the average patient load was about 50.

The hospital compound consisted of approximately 41 acres.

Prior to the construction of this facility, the designated Dispensary, Submarine Base, Coco Solo, functioned as a hospital. Inpatient care was available in five wards, including a dependent's service. The average patient census in the late 1930's was about 30.

CORONA, CALIF.

This naval hospital originally was acquired on 9 December 1941, intended for use as a convalescent hospital. The original address was Norco, Calif. CAPT H. L. Jensen, MC, USN, reported aboard as medical officer in command on 2 January 1942. The original hospital complex consisted of the resort hotel known as the Norconian.

The exclusively Lake Norconian club complex consisted of a 684-acre tract of land containing a 50-acre artificial fresh-water lake. The site was located approximately 50 miles east of Los Angeles, 4 miles north of Corona and was within a 25-mile radius of Pomona, Santa Ana, Ontario and Riverside. The hotel complex was owned by the Spreckels family, widely-known in the California sugarbeet industry.

An extensive building and expansion program was begun promptly to enlarge the patient capacity and to convert existing facilities into operating rooms, laboratories, mess halls and other necessary adjuncts of a naval hospital. The expansion was along the lines in which individual units with independent facilities were organized with self-contained messing and other facilities. Each unit was planned for a particular type of patient and was therefore a separate hospital but the whole complex remained under a single, central administrative command. The first patients were admitted in February 1942; by autumn, the patients census had reached 600. The first patients were received as transfers from other naval hospitals. In January 1943 a draft of patients, numbering 225, with rheumatic fever was received and thereafter the hospital became a rheumatic fever center. Incoming patients arrived by rail, plane and ambulance since many air fields,

transcontinental rail lines and excellent highways were readily available.

During the first year of operation, the staff averaged 30 medical officers, 35 nurses, and 178 hospital corpsmen. A total of 1,186 patients were treated during the first year.

The hospital generally was divided into four units:

Unit 1. This unit was the nucleus of the hospital and centered about the original buildings. The administrative offices were located here. This unit contained quarters for nontuberculosis, officer patients and was the center of the surgical service with large operating rooms, the main X-ray department and the central dental equipment. New construction provided a permanent building of 14 wards for enlisted patients. The entire unit provided a bed capacity for 174 officers and 706 enlisted men.

Unit 2. This unit was new construction and consisted of a series of one-story, wood buildings with red-tiled roofs. It was designed and used as the tuberculosis unit and was a complete hospital for tuberculosis patients. It had a bed capacity for 163 officers and 437 enlisted men. It had an independent galley and messing facilities and separate quarters for nurses and hospital corpsmen assigned duty in it. A complete surgical department, dental unit X-ray department and laboratory service were available.

Unit 3. This unit was also new construction but of a temporary nature and was completed and placed in operation 1 January 1944. It was designed primarily for the treatment of patients with rheumatic fever but it became necessary to use unoccupied spaces for overflow tuberculosis patients who could not be accommodated in Unit 2. It was semi independent of the other units, having its own messing facilities, administrative offices, dental, X-ray and laboratory services. It had a bed capacity for 1,723 enlisted men; there were no facilities for officer patients.

Unit 4. This unit was taken over as a convalescent unit on 1 July 1944. It is located approximately 27 miles northwest of Corona and five miles west of Pomona. The Army first occupied the site while training troops for desert warfare early in 1942. The facility formerly had been the California Narcotic Hospita; the Army increased its capacity to 1,000 beds by constructing temporary buildings for such use as wards, mess halls, and laundry. In addition to having been designated as a tuberculosis hospital it was also selected as a center for the treatment of poliomyelitis and rheumatic fever. In October 1945, it was additionally designated as a center for the treatment of men who had suffered gunshot or shell wounds of the spinal cord or injury due to the fracture of the spinal column.

These "cord bladder" patients required an unusual amount of nursing care. Such technics as lifting and turning to avoid pressure sores, changing dressings, care of the bladder and bowels, feeding if an arm paralysis existed and such other intensive care technics were necessary. An especially-trained group of hospital corpsmen and nurses were assigned to these wards. Physical therapy, including hydrotherapy, ultraviolet exposure, heat and massage were of paramount importance in treating these patients.

In 1944, extensive research in rheumatic fever was begun. Many of the medical officers on duty were drawn from the teaching staffs of the medical schools in the southern California area. During 1944 and 1945, approximately 10,000 patients with rheumatic fever were admitted to the hospital.

The hospital was disestablished on 1 November 1949. In February 1951, authority was given to the Bureau of Standards to take over the separate unit and establish a laboratory for special research.

On 1 June 1951, the hospital was recommissioned to provide a general hospital for the Armed Forces and their dependents, though recommissioning involved only 3 of the 4 units. The bed capacity was established at 650 in Unit 1; Unit 2, remained with the Bureau of Standards; Units 3 and 4 together with unit 1 provided a total bed capacity of 1,690.

Following the occupation of the property as a Navy Hospital it was nearly 5 years before the actual purchase was completed. During this time, a court action including condemnation of the hotel and the land proceeded. Finally, in 1946, the Navy acquired full title at a court-decided cost of \$1,000,625.

CORPUS CHRISTI, TEXAS

The Naval Hospital, Corpus Christi occupies a complex of 40½ acres on the southeastern portion of the Naval Air Station. It occupies flat, sand land bordering Corpus Christi Bay. Construction of the central group of buildings was begun in 1940 to provide a large dispensary for the Naval Air Station. The air training activities expanded, and it was found necessary to increase the medical facilities. Authorization to establish a naval hospital was included in the Fourth Supplemental National Defense Act of 1941, approved 17 March. This Act provided \$700,000 for additional hospital facilities.

An order by SECNAV, dated 14 May 1941, established the Naval Hospital, Corpus Christi, effective 1 July 1941, and the hospital was commissioned on that date with CAPT W. L. Mann, MC, USN, in command. On commissioning, the hospital had accommodations for 454 beds.

The buildings in the hospital complex were of one-story frame construction with the exception of the administrative building, nurses quarters and Hospital Corps barracks which were two stories in height. First floor decks of reinforced concrete set on a concrete foundation, were elevated well above the ground for cooling effects, while the second decks of the two-story buildings were of hardwood construction.

Expansion of the hospital facilities continued throughout the war years with the erection of additional ward buildings, a dependent's hospital, Waves barracks and other accessory buildings, providing a total capacity of 768 beds. In an emergency, the bed capacity could be expanded to more than 1,000.

On the hospital reservation were living accommodations for 5 married officers, 55 nurses, 120 enlisted men, 120 Waves, and a Marine guard of 16.

The highest census of patients reached during World War II was 1,397. Utilities for the hospital were furnished from the Naval Air Station. The hospital is located approximately 15 miles from the city of Corpus Christi.

The Naval Hospital, Corpus Christi, not only has provided medical support to the Naval Air Station but has on several occasions functioned as a disaster control center for both natural and industrial catastrophes. Its location is such that frequent Gulf-area hurricanes cause wide-spread destruction. A most recent hurricane, the so called hurricane Celia, struck in August 1970. Many structures, including the dispensary in the Naval Air Station, and several buildings, including the administration building, of the naval hospital, were severely damaged. There were few buildings of the hospital complex left with a roof after the hurricane passed through. It was necessary to evacuate patients most of whom were transported to the Army hospital at Ft. Sam Houston. In 1971, construction of a replacement hospital was in progress.

For some years it had been planned to replace the temporary buildings with a modern, permanent complex of buildings for a new naval hospital. The destruction wrought by the hurricane hastened the necessity for this new construction. Construction battalion workers replaced roofs on the damaged buildings and the hospital was out of commission only 2 or 3 days.

In April 1947, an ammunition ship exploded and burned at Texas City, a distance of about 125 miles from Corpus Christi. There were many casualties. A medical and surgical unit was dispatched from the hospital by air to assist in the treatment of casualties from this industrial disaster.

Damage that resulted from hurricane Celia was estimated to be about \$500,000. General repairs and replacement of necessary operating buildings, was designed to serve temporarily until the completion of the authorized new hospital, which was projected for completion by 1972. No casualties resulted from the hurricane, with the exception of the commanding officer, Captain Baker, who was struck by a piece of glass with a slight injury to his face.

DUBLIN, GA.

The Naval Hospital, Dublin, Ga., was designed and built by the Navy, in collaboration with the Veterans Administration, intended for use by the Navy during the war as a general hospital and by the Veterans Administration after the war as a neuropsychiatric hospital. The Navy hospital occupied a compound of some 230 acres on U.S. Highway 80 near the town of Dublin, Ga. Dublin is about 165 miles southeast of Atlanta and 250 miles west of Charleston, S.C. Dublin had a population of about 11,000 during 1945. The hospital complex consisted of 106 cultivated and 126 wooded or drained swamp land acres.

There were 55 permanent buildings in the original complex of this 500-bed hospital. It was built of brick, the buildings was being limited to two stories owing to its intended post-war use as an NP hospital. The administration and subsistence buildings faced the northeast and formed a central annex from which chevron-shaped ward buildings extended in four directions, being carried further to the rear than in the front. The hospital was established on 22 January 1945, with CAPT A. L. Bryan, MC, USN, as the first medical officer in command. The expansion of the hospital to 900 beds was recommended before construction was completed, so that when commissioned it had a capacity of 912 beds, all in permanent construction. It was possible to expand the patient capacity to 1,480 beds in an emergency. The hospital reservation contained living accommodations for 12 married officers, 25 bachelor officers, 73 nurses, 178 enlisted men, 128 Waves, and 44 civilian employees.

The highest census of patients was reached in the summer of 1945, when the patient load was 1,288.

The first draft of patients were received on the date of commissioning, 22 January 1945. Access to the hospital was by rail and air. The first few drafts of patients consisted of convalescent patients from overcrowded hospitals on the West Coast. The hospital was designated as a rheumatic fever center and most admissions were rheumatic fever patients. At the end of the war, the hospital remained as a rheumatic fever treatment center and Navy Medical Research Unit No. 4 was commissioned there on 31 May 1946, having as its purpose experimental research in all phases of rheumatic fever. This research unit was under the military control and coordination of the medical officer in command of the hospital.

In January 1946 a serious coal shortage resulting from the nation-wide strike caused the supply of coal to reach precariously low limits. The emergency was met, by conservation of fuel and closing unused wards. In May, a nine-hole golf course was completed on the hospital grounds.

The hospital was disestablished on 30 June 1948; the hospital and all its facilities were transferred to the Veterans Administration which agency took over the administration on 1 July 1948.

FARRAGUT, IDAHO

The Naval Hospital, Farragut, was commissioned 15 January 1943, with CAPT H. S. Harding, MC, USN, the first medical officer in command. The hospital was constructed to support the Naval Training Center in this location. A Hospital Corps School, Basic A, functioned as a subordinate command of the naval hospital.

The selected site for the training center and naval hospital was a poor choice; a considerable incidence of upper respiratory diseases were prevalent throughout the history of the navy activity.

The hospital was designed as a 1,000-bed facility, but was soon expanded by the addition of 750 more beds. By mid-1945 it became necessary to provide additional spaces for convalescent patients; therefore, a portion of the Navy Training Center, known as Camp Bennion, was transferred to the hospital command making available an additional 1,600 beds. The peak census of patients was reached 1 September 1945, when 3,542 were on board. From 15 January 1943 to 7 November 1945 a total of 43,498 patients had been admitted to the hospital.

The Hospital Corps School, commissioned at the same time as the naval hospital, provided Basic A school training for more than 17,000 hospital corpsmen before it was decommissioned 31 October 1945.

The Naval Hospital, Farragut, was decommissioned 15 June 1946.

FORT EUSTICE, VA.

The Naval Hospital, Fort Eustice, Va., was acquired from the Army.

The Army acquired the land in 1918, to meet the needs of the Coast Artillery Corps for a land and firing center. In 1925, three camps known as Camp Abraham Eustis, Camp Wallace, and Balloon Observer School were combined to make up the Fort Eustis complex. The Fort was under the control of the Coast artillery until 1930, and later became a short-term prison camp for the Department of Justice.

In 1934, a transient camp for bonus marchers was provided in the Fort. In 1936, the area was used as a maneuver area and bombing range under the supervision of Langley Field. The Fort became a replacement center for the Coast artillery in 1941. In the summer of 1943, the War Department placed the Fort in inactive status. The Army station hospital and grounds were transferred to the Navy and became U.S. Naval Hospital, Fort Eustice. The commissioning date was 29 August 1944, with CAPT H. V. Hughens, MC, USN, as the medical officer in command.

As an Army station hospital, it had a bed capacity of 800. When the Navy took over, additional ward space was constructed to provide a maximum capacity of 1,700 beds. During the nearly 18 months the hospital was in commission more than 10,000 patients were admitted. The last remaining patients were transferred to the Naval Hospital, Portsmouth, Va. on 3 January 1946. The hospital was officially disestablished 1 February 1946. Only one commanding officer, Captain Hughens, served during the period the Navy operated the hospital.

FORT LYON, COLO.

The history of the Naval Hospital, Fort Lyon, Colo. covers the period from 1906 to 1922. The hospital was commissioned for the purpose of caring for patients with tuberculosis.

The history of Fort Lyon, insofar as white men are concerned, dates back to as early as 1826. At that time, the Bent brothers, William, Charles, Robert, and George built a stockade of adobe and logs along the Arkansas river. These men were engaged by the American Fur Company to provide beaver pelts and beaver skin hats. The Bent brothers built a temporary stockade half way between the present cities of Pueblo and Canyon City where they remained for the next 2 years. In 1828, following the advice of a friendly band of Cheyenne Indians, the brothers moved their trading post to a location about 12 miles above the present city of Las Animas.

A new trading post was erected on the north bank of the Arkansas river at this new location. The trading post was almost decimated, in 1829, when during the course of construction of the new post a smallpox epidemic broke out. Messengers were sent to every Indian tribe and camp nearby warning them not to come near the trading post till the crisis was over. William Bent contracted smallpox, but he survived. The smallpox plague lasted almost a year but the structure was completed, in 1834, and called Fort Williams. It was built for stability and defense against hostile Indians, but there is no record of it ever having been attacked. It was used by General Kearney as a base of supply and as a temporary hospital during the Mexican War, in 1846.

The history of Fort Lyon, as it is related to the Navy began 17 November 1906, when the first Navy personnel arrived to inspect the site for the purpose of establishing a navy hospital. The navy group was composed of SURG. T. A. Berryhill, SURG James G. Field, Civil Engineer A. L. Parsons, and PHARM T. N. K. Phillips. The Navy party was confronted with a sorry sight. The buildings were delapidated and falling to pieces. There was not a single sound roof nor even a part of the old building which could be used for shelter. A great deal of damage had been the result of natural deterioration, but Colorado blizzards, sand and rainstorms had assisted in the work of destruction. The buildings had been systematically looted and gutted. Doors, windows and even structural timbers had been carried away and it was said that this material could still be found in many of the old ranch houses in the vicinity. Cattle and horses roamed about freely on the grounds and in the houses rattlesnakes were encountered frequently with signs of destruction everywhere.

Temporary office spaces were secured in the courthouse of Las Animas. When, in January 1907, SURG B. L. Wright, USN, arrived as the first patient, he was immediately placed on a duty status.

The choice of Fort Lyon as the site for the treatment of patients with tuberculosis was an ideal one, since treatment then consisted largely of sunshine and fresh air in a climate normally dry and temperant. The Navy hospital began as a temporary tent camp with sanitary facilities. A large labor force was hired to clear away the rubbish and to make temporary repairs to the existing buildings. The construction of a more permanent camp, mainly of rubberoid sheds and additional tent quarters for duty personnel and patients was begun. The hospital staff personnel

moved to the Fort to live in tents during the middle of February 1907. On 25 February, 30 bundles of hospital tents were received for the accommodation of patients. No large number of patients arrived until 16 September 1907 when 24 were admitted. Of the 24 buildings found on the reservation when the Navy took over, 10 were torn down completely. The others were repaired and occupied as soon as they could be made liveable. In 1922, the Navy transferred the hospital to the Public Health Service who held it only 2 months; the PHS in turn, relinquished the Fort to the newly established Veterans Bureau, which agency has maintained the facility as a Veterans Hospital since that date.

Fort Lyon is about 4,000 ft. above sea level with the nearest town, Las Animas, about a mile to the west of the hospital facility. The climate is mild the nights are always pleasant. The average temperature is 49° F.; extremes of 108° and 22° F. have been observed, although seldom. The average humidity is 56.25. The annual rainfall is 11 inches. Snows are seldom more than 3 inches in depth and rapidly disappear.

When the Navy contingent arrived, in 1906, the reservation was described as being devoid of trees and was covered with weeds; roads did not exist; tumbleweed predominated everywhere. The water supply was derived from shallow wells. The work of remodeling the buildings and constructing sewers digging wells constructing a heating system and a power plant was accomplished under contract, supervised by the Bureau of Yards and Docks. A 100,000-gallon fresh water, pressure tank was completed in June 1908. Until that time, water was supplied to the houses in barrels. By 1911, the hospital was a well organized institution

of an approximate 200-bed capacity. In 1917, new construction was required as a result of the expansion incident to World War I. A dairy herd was acquired which necessitated the construction of a barn and sheds. Hospital facilities were expanded to include accommodations for 700 patients.

In 1921, the hospital was described as having 5 separate mess halls with complete modern kitchens and dishwashing equipment. These mess halls served infirmary patients, ambulatory patients, duty personnel, sick officers, and nurses. There are about 180 buildings in the hospital complex requiring approximately 200 staff personnel and civilian employees for treatment of patients and maintenance of the facility. Most of the needs for milk were supplied by its own dairy herd and a good quantity of farm products were raised in the hospital gardens. A considerable quantity of the pork, used in the commissary department, came from the more than 300 pigs kept. There was a considerable problem from dust storms in the late winter and early spring before vegetation had germinated.

During the 14 years the Navy used this institution more than 5,400 patients with tuberculosis had been treated. Of these 4,474 were invalided from the Service 398 returned to duty 483 died 8 deserted and 72 were transferred to other hospitals.

The principal reason why the Navy abandoned this hospital as a tuberculosis treatment center was owing to the creation of the Veterans Bureau, and a projected system of hospitals, the Army and Navy no longer had to maintain facilities for the chronically ill. Instead, when it was determined that an officer or man was going to require many months of continuous treatment--with the probability of not returning to active

duty--they were discharged by medical survey and transferred to the treatment facilities available in the Veterans Bureau system.

GLENWOOD SPRINGS, COLO.

This special hospital, redesignated convalescent hospital, was located on the main line of the Denver and Rio Grand Railroad, in Garfield County, Colo. Glenwood Springs is approximately 185 miles west of Denver and 385 miles east of Salt Lake City. The hospital was located in the valley of the Colorado River at the junction of the Roaring Fork River. Access to Glenwood Springs by road was by means of U.S. Highways 6 and 24, hard surfaced all-year-around transcontinental highways.

Glenwood Springs is isolated and protected by the high, rugged, Rocky Mountains on the western slope. It was an ideal location for Veterans of combat to find relaxation and recuperation.

The hospital was formerly the Hotel Colorado, built by a syndicate of British investors, in 1893. The hotel was a 6-story building, constructed of native, matched red sandstone and pressed brick with a slate roof containing 250 guest rooms. The main floor of the hotel contained a large lounge, 3 large dining rooms and a ballroom. A large kitchen, pantries, separate bakery and refrigerated storerooms, in addition to an ice making plant, provided an adequate food preparation area for the hospital. Upper floors of the hotel were served by two elevators. A small corral and stable were nearby.

The basement of the hotel was converted to examining rooms and clinics. The terrain upon which the hospital was located was such that the basement was substantially on ground level. A separate annex of more than 60 rooms, of the same general construction as the hospital proper, contained 40 bedrooms, used for quarters for the hotel help.

In this building was located the landry.

The hotel was heated from a central heating plant located in the basement of the main building.

The hospital premises were attractively landscaped and a large court in front of the hotel contained an attractive trout pool and fountain. Prior to World War II, the hotel was one of Colorado's foremost tourist resorts, catering to an exclusive clientele from the United States and abroad.

The hotel and all its furnishings were taken over by the Navy when the hospital was commissioned. The lounge, corridors, main dining rooms, and public rooms were carpeted with attractive Brussels carpet furnished with deep-cushioned lounging chairs. The guest chambers contained principally double brass beds with some twin beds. Each room was sufficiently large to accommodate at least two single beds and from three to four double-deck beds. All rooms had individual wash basins and many had private baths.

The hotel was designed as a summer playground originally, but the hot springs resort was conceived as an all-year therapeutic facility. The original company was partly responsible for the building of the city of Glenwood Springs and at one time, owned much of the real estate upon which the city was built. The company established its own water supply system, its hydro-electric power plant and all other facilities required in the operation of the resort. Among other recreational facilities was a 9-hole golf course located to the west of Glenwood Springs.

The English investors sold the entire property to local Colorado and Wyoming interests about the turn of the 20th century. Near the hotel is located the Yampah Hot Springs. Prior to the Navy takeover, the Hot

Springs facilities were operated in conjunction with the hospital. The Hot Springs were described as providing an abundant supply of hot mineral water with a number of surface openings. The largest of these openings yielded a flow of 3,000 gallons of mineral water per minute at a constant temperature of 127°F. It was said, this spring supplied the largest outdoor mineral swimming pool in the world. On the edge of the huge swimming pool was a three-story, red stone bathhouse. Within the bath house was a complex of dressing rooms for the bathers, also containing cabinet and tub baths for individual treatments.

The swimming pool was open the year round. Bathing in comfort was possible even though the surrounding air might have been below the freezing point. The pool provided a layer of vapor above the water taking the chill out of the atmosphere. The enclosed portals of the bathhouse extended over the water so that a bather could emerge from the dressing room directly into the pool. The pool was constructed of brick and was 750 feet long by 110 feet wide. It had a maximum depth of about 6 feet. Some 4½ million gallons of natural mineral water flow in and out of the pool every 24 hours.

The city of Glenwood Springs is at an elevation of about 5,785 feet above sea level. Incorporated in 1885, the city at one time was an important coal and other mineral mining center including marble. The water supply for the hospital was from cold mountain springs, of which there was an abundance. The location of the hospital was such that it was a hunting and fishing paradise. It was said that it was one of the favorite spots for big-game hunting of President Theodore Roosevelt. Colorado mountain trout were in the streams in abundance stocked by the fish hatcheries stocks nearby.

While the Navy maintained a convalescent hospital at Glenwood Springs, old time citizens of the area in interviews recalled that every President, since Harrison had visited the hotel since 1895. It was said that Teddy Roosevelt stayed a whole month. During this time it was temporarily the seat of Government.

GREAT LAKES, ILLINOIS

The Naval Hospital, Great Lakes, Ill. is located on Lake Michigan about 34 miles north of Chicago and 3 miles south of Waukegan, Ill. The hospital was established to provide medical support to the Naval Training Center, Great Lakes; the reservation consists of about 103 acres.

The Naval Training Center was opened in 1905. Originally, 12 acres of a huge tract acquired that year were set aside as the site of the naval hospital. The hospital was authorized by an Act of Congress, approved 13 May 1908, when \$250,000 was set aside for its construction. The original structure was designed by Jarvis Hunt of Chicago and construction of the hospital was begun in June 1909. The hospital was placed in commission in 2 October 1911 with Medical Inspector J. G. Field, MC, USN, as the first commanding officer.

The original hospital building was constructed of red brick with a central structure of basement and three stories and two ward wings of two stories. These four wards and five rooms for sick officers provided a bed capacity of 81. The hospital was closed in June 1913, when the number of patients decreased to the point it was no longer considered justifiable to keep the hospital open. It was not long out of commission, however, for in May 1914 it was reopened. During World War I, the hospital was vastly expanded by erection of many one-story temporary buildings on land to the south and the west of the original structure. At the height of World War I, the hospital had a bed capacity of 3,000 and in the fall of 1918, 2,604 patients were under treatment.

After World War I, the patient load decreased but owing to arrangements with the Veterans Administration the Navy began to care for veterans in its naval hospitals in the early 1920's. In 1921, 150 veterans were treated in Great Lakes, increasing to a total of more than 700 treated in 1930. In the peace years between World War I and II, activities at the training center decreased to the point that on 30 June 1933, the hospital was closed again. It was reopened 2 years later, on 1 July 1935.

At the beginning of World War II, there were 45 structures in the hospital complex, many of them being temporary buildings erected during World War I. These old buildings were repaired and the capacity greatly expanded during World War II; additional temporary buildings were provided throughout the war. A Hospital Corps School, with a capacity of 600 students, was established in 1942, and in 1945, a new dependents hospital was erected with a capacity of 100 beds.

In January 1945, the hospital acquired two acres of the Navy Training Center known as McIntire Dispensary, and Camp Lawrence, adding 75 acres and 65 buildings to the hospital complex. Camp Lawrence was used as a convalescent hospital and McIntire Dispensary became a division of the naval hospital. The highest census of patients reached during World War II was 7,829. For care of dependents, the Navy also had the use of 512 beds at the Wharton Memorial Hospital, of Northwestern University.

At the end of World War II, most of the temporary buildings were demolished. Some were converted into quarters for married officers and enlisted men.

During early 1946, the Naval Hospital, Great Lakes, was confronted with a problem characteristic of all naval hospitals during that year. This problem was the task of caring adequately for a large patient load and at the same time handling the accelerated demobilization of medical officers, nurses and hospital corpsmen. This hospital was an end-point for the transfer of patients residing in the Ninth Naval District. Many of these patients required hospitalization prior to their release to civilian life. Added to the expanded patient load, there was a major epidemic of scarlet fever and minor epidemics measles, mumps, and diphtheria.

The commanding officer, in his report for the year, complained that BUMED, being aware of these problems provided extra Medical Department personnel as staff members, but many of those ordered for duty there had only a few weeks or at most a few months to serve themselves. The commanding officer complained that under ordinary conditions and excellent motivation it generally takes 2 to 3 weeks for the average medical officer to become a useful member of the staff of the hospital to which he had just reported for duty. When the officer is chiefly occupied with his own problems of returning to civilian medical practice, it was evident that he was not to be of much use to ease the hospital workload. The commanding officer hastened to point out that he intended no criticism of the Reserve officer, but was merely making a statement of obvious fact in relation to human nature. He added that it would be the exceptional medical officer, who having less than 3 months of activated obligated service remaining, would be of much value in adding to the

efficiency of the hospital staff. Despite the obstacles, however, the commanding officer pointed out that the hospital was able to fulfill its mission in caring for the sick wounded and injured, and that during the year 24,149 active duty personnel were admitted as patients.

There had been 6,703 patients remaining on the sick list 1 January 1946; of the total, 23,770 were returned to duty, 2,803 were invalided from the Service, 46 died, 3,258 were transferred to other activities and 943 remained as patients 31 December 1946.

During an 8-week period, between March and May 1946, a total of 409 patients were admitted to the hospital with hepatitis. It was presumed that a majority of the patients acquired hepatitis as a result of the administration of scarlet fever convalescent serum used until 16 May 1946, when its use was discontinued owing to the occurrence of jaundice among those who received the serum. There were several forms of the infection the most predominant of which were categorized as "homologous serum hepatitis" and "infectious hepatitis." Medical authorities differed in their opinions as to the identity of these types of hepatitis.

Of the 409 patients admitted during the epidemic, 261 were primary admissions, 120 were transferred from the BUSANDA activity at Cleveland and 28 were transferred from other Navy activities. All of those transferred from BUSANDA had a history of having received homologous serum as controls, in a study of influenza vaccine. The majority of the

remaining 289 primary admissions and transfers from other hospitals had received scarlet fever convalescent serum, had a history of contact with hepatitis or developed hepatitis while in or very shortly after leaving areas where infectious hepatitis was endemic, while a small number had no history suggesting a possible etiologic factor and did not have hepatitis at the time of admission or during their hospital stay.

Of the four patients who died, all had received scarlet fever convalescent serum. Complications were rare. It was believed that the use of homologous serum should be restricted; had it been, it was observed, in retrospect, four lives and a large number of man hours of suffering would have been avoided. It was observed that during the acute phase of the disease most patients appeared to have an instinctive distaste for all fats and avoided them voluntarily.

It was concluded that the use of human convalescent serum for prophylaxis or treatment of scarlet fever or any other disease should definitely be abandoned owing to the danger of transmitting homologous serum hepatitis. In the report for 1946, the commanding officer noted that two of the principal handicaps to efficient operation of this hospital had been the size of the institution and the fact that it occupied so much space. A 9,000-bed hospital was too big, he said, to permit the best and most efficient care of the individual patient and when there is added to the ordinary medical and surgical care, the responsibility for recreation, education, rehabilitation, legal aid and punishment, civilian readjustment, religious consultation, family aid and settlement of marital difficulties, promotional hobbies and diversional occupations,

all these problems are simply too large to be efficiently carried out by one command. Two thousand beds, he said, should be considered maximum for any Navy hospital. When the hospital shows signs of getting larger than this, it would be advisable to build an entirely new hospital in a separate location.

The commanding officer recommended the centralization of the really sick in a more compact unit where, with the shortage of nursing personnel, they could be adequately cared for with a minimum of lost motion. If his recommendation were to be adopted the standard ward of a naval hospital could be abandoned. The really sick would be cared for in rooms of one- or two-bed capacity and all of these should be close together in a 500-bed unit. The bulk of the occupants of the present open wards would be far enough removed that they would not be cluttering up wards with debris, playing radios and otherwise dissipating the energies of the medical officers, nurses and hospital corpsmen.

In 1947 the patient load was maintained at well under the 1,000 mark.

With all its annexes the bed capacity of the hospital was increased to about 9,000, during World War II. The Hospital Corps School, which had been in operation early in 1942, was transferred to San Diego in July 1944 for the purpose of making its buildings available for use in the care of patients. On 23 June 1945, a new Hospital Corps School for Waves was opened in a section of the training center known as Camp Moffett. This school was closed on 18 October 1945.

Among the hospital departments that were expanded vastly during the war, the commissary department served as an example. At the outbreak of the war, the hospital staff and patients were messes in two galleys. By the end of the war there were nine galleys in commission and more than 10,000 people were being fed on a given day. At the outbreak of the war, the commissary department, under the supervision of a chief pharmacist, consisted of 29 civilian employees and 6 hospital corpsmen. At the end of the war, the commissary department was under the supervision of a Hospital Corps officer and nine warrant officers one for each of the nine galleys who supervised a staff of 152 civilians and 96 enlisted men.

Ground was broken in 1957 for a new hospital. The present hospital is dominated by a 15-story structure.

GUAM, MARIANAS ISLANDS

The present naval hospital in Guam was dedicated 2 November 1954, with CAPT T. F. Weinert, MC, USN, as medical officer in command. The present hospital was not the first to provide medical health care to Navy forces and civilians in the Guam area.

The United States Navy became involved in the affairs of Guam, in 1898. Executive Order No. 108, dated 23 December 1898, provided "the Island of Guam, in the Ladrones, is hereby placed under the control of the Department of the Navy. The Secretary of the Navy will take such steps as may be necessary to establish the authority of the United States and to give it the necessary protection and Government."

By provision of Article 2 of the Treaty of Peace between the United States of America and the Kingdom of Spain, signed at Paris 10 December 1898, Spain ceded to the United States the island of Guam in the Marianas. By Article 8 of the Treaty, Spain ceded, "on the Island of Guam, all the buildings, forts, barracks, structures, public highways, and other immovable property, which in conformity with law belong to the public domain, and as such belong to the Crown of Spain."

The first provision of Navy medical attention provided in any facility at Guam appears to have been that available in USS Charleston, Surgeon Ammen Farenholt, medical officer. The same year, 1898, USS Yosemite, before leaving the United States for Asiatic waters was fitted out with medical supplies, instruments and furniture for the purpose of establishing a small hospital at Guam should requirements of the Service make it necessary. So the Surgeon General reported in his annual report to SECNAV, for the year 1899.

Guam was by no means unknown to medical officers of the Navy. Many had visited that island on many occasions while serving in cruising ships in Asiatic waters. In 1899, Passed Assistant Surgeon T. R. Ward reported on the high incidence of syphilis and leprosy following his observations there. Dr. Ward noted that syphilis, especially in the tertiary forms, was very common. He described the ravages of syphilis as being terrible. He noted many people without noses, with lifeless gums and gigantic loathsome ulcers. It was his opinion that many of the cases rivaled the worst ravages of cancer and people such as he observed were seen only rarely in a hospital ward or skin clinic of a large city. He observed that natives thought little of the disease and did not take any form of treatment. Dr. Ward was appalled by what he had observed, and he strongly urged that the United States Government take active measures toward curing the disease, which he considered to be largely hereditary.

In relation to leprosy, Dr. Ward expressed the opinion that it was endemic and by no means a rare disease. He pointed out the Navy had no fear of it and in one instance he noted there were two marked lepers living in the same house with three other persons not affected. He stated that the Spanish had apparently tried segregation but had not been successful in their efforts. Dr. Ward had observed medical conditions on Guam for short period--3 weeks'--but in that time he had observed 22 patients with leprosy.

In the Surgeon General's report for 1901, it was noted that Yosemite had relieved Charleston as the station ship. The medical officer was attempting to teach sanitation measures and to teach the natives to

properly care for themselves. The hope was expressed that a self-supporting hospital would soon be established at Agana. In the meantime, before such hospital facilities might be provided, natives as well as the Navy personnel continued to receive medical attention and medicines from the medical department of the Yosemite. During the first 2 or 3 years of the Navy's occupation of Guam, work was commenced and continued in the establishment of a Navy Station. During that time, a small building had been assigned to the Medical Department for use as a hospital but it proved to be inadequate and a larger building was provided. This building was near the Government House, the barracks and other public buildings at Agana, the capital of Guam.

The capital was described as being built on the low land at the coast, the elevation being only 4 to 12 feet above sea level. There were neither sewers nor provisions made for drainage but the soil was sufficiently porous to rapidly carry off the collections of water following heavy rains. It was noted that typhoid fever was epidemic among the natives, owing to the pollution of the drinking water in shallow wells near cesspools and the common lack of any provision for the receipt of refuse matter. During a 5-month period in 1899, there were 25 admissions to the sick list with 4 deaths from among the Navy Force of 143 men, with a diagnosis of typhoid. The capital area was described as debilitating, but that the health record of the Yosemite, anchored near Cabras Island had been excellent and that it was a far better area in the matter of health than the one at Agana. At Agana, the total number of admissions to the sick list from an average complement of 143 during 1899 was 155. During this time there were 5 deaths.

In the annual sanitary report, made in 1900 by Surgeon Philip Leach, it was reported and recommended that Navy facilities be constructed on Cabras island which is about 6 miles from Agana. It was pointed out that this island never having been inhabited and was free from effluvia given off by the filth soaked soil of the towns. It was, therefore, much more desirable than the capital.

Dr. Leach described the Island of Guam as fertile and capable of sustaining a much larger population than then existed. He noted that under present conditions the food question gives much trouble to natives as well as foreigners and sometimes causes considerable anxiety. Beef was not plentiful and what was available was of poor quality there being no cold storage plant and it must be eaten soon after being killed. There was no mutton, the diet of the hogs precluded the use of pork in its various forms on the foreigners' table, white potatoes did not grow and the few other vegetables of the temperate climates were raised only in small quantities. Fruit of all kinds was scarce. Chicken eggs and an inferior kind of sweet potato and other vegetables constituted an unsatisfactory diet.

Dr. Leach noted that during the intervals between the Spanish evacuation and the arrival of the U.S. Navy, the country was without many provisions and medicines; he added, that it appeared that even during the Spanish period but little attention was given to the medical wants of the native population. The medical officers of the Yosemite began at once to interest themselves in the sick and injured and during 4½

months of 1899, they had treated 427 civilian patients.

Dr. Leach noted that typhoid was endemic and that the island probably had not been free from it for many years. He believed that leprosy was less common than was previously supposed and that at the end of the Spanish administration there were 19 registered cases, 5 of whom had died in the succeeding 2 years. Dr. Leach supported the previously-expressed belief that syphilis was probably almost all hereditary. He had noted no primary or secondary syphilis and of the 127 patients treated not one gave a history of primary or secondary symptoms. He noted that it was not uncommon for more than one generation of the same family to be under treatment simultaneously. He noted that treatment procedures had been attended by most gratifying results, and excepting the paralytic cases all had responded promptly to the appropriate treatment which included mercurials and potassium iodine.

The Surgeon General, in 1901, reported that the inhabitants of Guam were proceeding with the establishment of a civilian hospital under the supervision of Navy medical officers and were showing a desire to conform themselves to the customs of other communities. Typhoid fever was reported to have almost disappeared in consequence of improvements in sanitary facilities.

On 13 November 1900, Guam and adjacent waters were swept with a typhoon. The barometer stood at 27.4 which was the low limit registered on the device. The Yosemite at anchor was speedily overpowered by the force of wind and she was dragged down on the reef; she parted her cables was struck repeatedly and then blown entirely over the reef and out to sea. The ship was sunk with all her surgical supplies which went down with the ship forward. Fortunately, only five members of the crew were lost.

On shore, the entire island was drenched in salt spray, great numbers of trees and about half the houses were blown down. The sea rose in the capital, Agana, as far as the plaza but went out as the typhoon rotated on its axis. Nearly every building was unroofed, including the palace and the church. About 500 tiles were blown from the roof of the hospital. There was much shortage of food, but after the storm blew itself out, the condition was eased by timely issue of flour, rice and corn by the Government. Surgeon F. A. Hesler wrote in the 1901 report, that typhoid been completely eradicated. An epidemic of grippe, however, occurred with more than 1,300 natives acquiring the disease with 22 deaths. The deaths occurred among those not within reach of medical treatment. There was relatively little involvement on board ships but in the shore force nearly all had been effected with a disease which was largely gastrointestinal.

During the next several years, various Navy medical officers apparently divided their time between the station ships and the hospital on shore. The hospital was for the primary use of natives, but there are indications it was also used for the hospitalization of Navy men, particularly those at the shore station. Patients with long-term or serious diseases, frequently were transferred to the Naval Hospital, Yokohama. Most of the medical officers' attention appears to have been directed toward the improvement of sanitation facilities and methods; also, attempts were made and success was obtained from the training of natives in nursing procedures as well as educating the whole population in sanitation methods. The island was subjected (and still is) to frequent earthquakes, most of which were slight but some caused considerable damage. On 22 September 1901, the island was visited by a severe earthquake which

caused the hospital to be completely demolished. Surgeon R. T. Crandall reported, in 1902, that the native population of the island was 9,672 and all were being attended by the Navy Medical Department as the occasion required. He reported that some areas of the island, distant from the Navy Station, were visited at regular intervals by a medical officer and that necessary dispensaries, in charge of competent natives, had been established. A licensed corps of midwives, thoroughly instructed, attended confinement cases and were provided with necessary dressings and medicines. Dr. Crandall noted that a stay of more than 2 years at this station results in mental deterioration among the officers and men and he specially recommended that transfer to a cooler climate be accomplished after 2 years for the physical health of the command.

Dr. Crandall, the next year, emphasized his previous recommendation that prolonged stay in the Guam climate was detrimental to the health of those who stayed. He observed that after the first year the men as a rule begin to show physical and mental deterioration which becomes more marked as the length of the stay increased. During 1903, it was necessary to survey and invalid to the United States, four officers and 24 men, mostly suffering from recurring dysentery. Dr. Crandall observed that a second or third attack of dysentery was usually fatal. There were 4 deaths during the year 3 from dysentery and one from abscess of the liver. He noted that outgoing troops, for the most part, showed emaciation and debility, some of them having been here, or in the Philippines, more than 4 years.

He noted, with pride, that there was a distinct decrease in sickness among the natives. He noted that they now seek medical aid promptly when ill. He suggested that health in the town of Agana and its suburbs would

be vastly improved by construction of suitable waterworks and a subsurface drainage system. Dr. Crandall reported that during the year, 13 midwives had been granted licenses following a thorough course of instruction in practical obstetrics. At this time, 1904, the naval hospital was occupying space in the Maria Schroeder Hospital belonging to the Island Government.

In 1905, it was reported that by far the greater part of the work of the three medical officers on shore duty in Guam and the one medical officer in the station ship continued to look after the civil population of more than 10,000 inhabiting a territory of 207 square miles. Although exact figures for the number of natives treated in the hospital and the dispensaries were not given, it was estimated more than 7,000 calls were made at the dispensaries and more than 5,000 house visits had been made during 1904. Surgeon J. F. Leys, then the senior medical officer at the naval station, reported that before the Navy medical service had been established in Guam, the infant mortality was appalling and the population of the island was stationary or dwindling. In the 5-year period, 1900 through 1904, the population had increased by 842 which was nearly a 10% increase.

Special Notes on Pathology. In 1905, Dr. Leys reported, there was no malaria on Guam. The anopheles mosquito was not to be found. The *Stegomyia fasciata* (*Aedes Egypti*), or mosquito mostly resembling it, is abundant but yellow fever has not been seen. Yaws is a common disease. Dr. Leys noted that tuberculosis, with 39 deaths, accounted for more than 20% of the deaths from known causes. The lumbricoid worm is a veritable curse in this community, he said. Practically no one can stay here 6

months and escape an invasion of this parasite. In whole American families consisting of four or 5 persons of all ages, even though they be as careful as possible with their diet and drink, all are victims of the worm. This, he pointed out, was because the eggs are so abundant in the dust and the soil of the garden and on the hands of servants that no precautions are effective; even though only distilled water is drunk, this provides no security. The natives are simply overwhelmed with these intestinal parasites. Dr. Leys repeated recommendations that had been made by his predecessors for the provision of a pure water supply, hoping that relief to some extent would be provided.

Spasmodic bronchial asthma was found to be unusually prevalent. It affected natives of all ages. Catarrh, with fever, was prevalent frequently reaching epidemic proportions. There was a rhino-pharyngitis prevalent for which no exact diagnosis had been made. The disease early in its progress affected the quality of the voice and in an advanced stage rendered the face repulsive so that many of its victims avoided public notice. Between 40 and 50 patients had been seen during the year. It was estimated that an additional 100 or more had not been seen. It was suggested that the etiology of the disease might be connected with the eating of rotted, sun-dried fish. Other authorities described it as being traceable to leprosy, hereditary syphilis, tuberculosis, yaws and other causes. The condition apparently lasted months or even years and was generally treated symptomatically with tonics and iodines.

The leper colony, in 1904, consisted of 24 inmates, although there were 2 more suspects under observation. Recommendation was made for the assignment of an additional medical officer, primarily for the purpose of studying pathology in the island. It was pointed out that was abundant material to work with but it was being neglected, partly because

there was not anyone there specially interested in pathologic work or competent to do it, and partly because the professional and executive demands on the present force left them no time to pursue such study.

In September 1905, a new native hospital was completed and occupied for the treatment of women and children. Construction had been paid for by money raised by subscription, fairs and sales. It was managed by a private association and received some aid from the Island Government. The Governor of the Island was president of the association and the senior medical officer was a member of the council. The senior medical officer also acted as superintendent of the hospital. The Maria Schroeder hospital was continued in use for men and boys over the age of 12 and the Susanna--the name of the new hospital for women and children--gave the native population greatly needed additional facilities for proper treatment. By the end of 1904, the whole population had been vaccinated against smallpox. A system was inaugurated whereby all children born during the preceding 12 months were vaccinated in January of each year.

In 1905, Surgeon E. R. Stitt made a special trip to Guam and reported on the rhino-pharyngitis condition, which had been reported earlier by Dr. Leys. This condition was given the identifying name of gangosa. It was generally conceded that after perforation of disfiguring infections of the cavities all treatment is merely palliative. It was suggested that the frequent involvement of the nasal duct was rather a strong point against the syphilitic nature of gangosa. It had long been the opinion that white men were practically immune to gangosa, and until 1905, no Navy personnel had contracted the disease. At this time, however,

a Marine private had demonstrated the disease and gave convincing proof of the incorrectness of that previously-held view. Conclusions reached were that 1) gangosa is a disease resulting in frightful mutilation unless it is checked in its incipency; 2) it is considered to be a disease which is contagious, affecting in many instances, a large proportion of a family but it is believed to be less infectious than tuberculosis and more so than leprosy; 3) in one undoubted instance it has attacked a white man; 4) the probability of the disease to sudden recurrences, after a period of quiescence, makes it peculiarly dangerous; and 5) the experience of the Spanish indicates that segregation is the only effective control measure to prevent the spread of the disease.

In 1909, a special report for the years 1907 and 1908 was made by Surgeon F. E. McCullough relative to the health and sanitation of Guam. He described the Island as having tradewinds blowing over the island finding no barrier of high mountains to retard their force thus saving the island from the disagreeable and intervening climate prevailing on larger islands in similar tropical areas. The winds blew alternately from the northwest to the southwest for 6 months followed by blowing from the southwest to the northeast. The temperature differences between annual maximum and minimums was described as only being a few degrees, with the average temperature being 80°F. As had previous medical officers in their annual reports, Dr. McCullough described the town of Agana as being unfavorably situated insofar as sanitary conditions were concerned.

Despite the unfavorable location of Agana more than 70% of the Island population lived within the nearby confines of the town in an area of less

than 2 square miles. As a result of the sanitary measures taken under the supervision of Navy medical officers, although many more measures were needed to be taken, the town was far more healthy than it has been under the control of the Spanish.

The report emphasized the prevalence of 5 principal disease conditions. These were guha, a pulmonary and enteric disease, apparently peculiar to Guam and the Caroline Islands and was responsible for nearly a fourth of all deaths. Worm infection was cited as a cause of 13% of deaths caused by intestinal worms and their infestation. The prevalence of worms was ascribed to polluted water, the absence of sewers and the fact that most of the native population were barefooted. Worm infection was not prevalent among Navy personnel, owing to more sanitary surroundings, but some were infected.

Tuberculosis accounted for 10% of the deaths, annually. Owing to relatively high humidity and large annual rainfall (116 inches) it was not an ideal climate for the treatment of tuberculosis. Leprosy and gangosa were two disease conditions which required careful attention and isolation of those suffering from the conditions. Gangosa was far more prevalent than leprosy. Syphilis was considered to be hereditary and affected the greater portion of the native population.

It was pointed out that no native practitioners were available, and that the Navy medical officers provided all of the medical attention available, not only to the Navy personnel but also to the native population.

The Surgeon General's annual report for 1910, noted that the Susanna Hospital was severely weakened by earthquake during that year, and it was

necessary to abandon it. The building was more than 150 years old, and was said to have been the oldest on the island. The Maria Schroeder Hospital, two thirds of which had been used for the past 10 years and designated as a naval hospital, was also inadequate. As a consequence SECNAV authorized the expenditure of \$6,000 for the building of a new hospital at Agana. Agreements were reached with the Susanna Hospital Association and the authorities who supervised the Maria Schroeder unit to provide a single facility to be designated as a naval hospital, but also to provide facilities for the treatment of natives--both men and women. It was further provided that the new hospital was not to be used for the treatment of gangosa or leprosy, special isolated areas being set aside for the treatment of these diseases.

As a result of this new construction the Navy medical facilities on Guam have since that date referred to as a naval hospital, and prior to 1910, at least informally, the structures used for the treatment of Navy personnel were also referred to as a naval hospital. The original site of the hospital consisted of only slightly more than an acre of ground. During this construction period and opening of the new structure, Surgeon H. E. Odell was the senior medical officer and presumably, the first medical officer in command.

The new naval hospital consisted of 4 buildings of the bungalow-type and were of two stories with large and capacious porches. The hospital consisted of three principal wards, each having a capacity of about 30 beds. The names used to designate the hospitals previously in use were generally retained in describing units of the new hospital. For

example, ward 1, used for the care of native male patients was generally referred to as the Maria Schroeder Unit. Ward 3, used for the treatment of female native to the island, was generally known as the Susanna Hospital. Ward 2 was for the hospitalization of enlisted Navy and Marine Corps personnel. The remaining building in the hospital complex, which together with the three ward buildings formed a square, with a patio in the center was used for administrative purposes and sick call purposes. The galley and mess hall, as well as medical storerooms, were in this building.

This facility, with a variable number of dispensaries or dressing stations scattered throughout the island, remained as the principal Navy medical facilities from 1910 until Guam was captured by the Japanese at the end of 1941. Necessary repairs and new construction were accomplished as needed and as funds were available for the purpose. Prior to World War II, the average complement of medical personnel varied between 6 and 12 medical officers, 1 pharmacist, 2 to 5 nurses and 30 to 40 hospital corpsmen. The dispensaries or dressing stations, scattered throughout the Island, generally were manned by senior hospital corpsmen.

Early in the occupation of Guam by the Navy, it was customary and continued to be routine procedure to train as many native females as was practical, not only in the technics of midwifery but also as native nurses. These women, through the years, provided the majority of the nursing attention in the Susanna Hospital, both when it was a separate entity, and later, when it was part of the naval hospital. A large outpatient service continued throughout all of these years. The effectiveness of the sanitary measures instituted by the Navy medical

personnel was demonstrated, in 1919, when it was noted that the population had increased to nearly 15,000. This was nearly a 50% increase in 20 years. The population increase was attributed to the much lower infant mortality than that which had existed under the Spanish control.

With the capture of Guam by the Japanese in the early days of World War II the naval hospital ceased to exist. U.S. Fleet Hospital No. 103 was designated to provide the initial medical support ashore, at Guam, as soon as it was recaptured in 1944. General R. S. Geiger, USMC, who commanded the assault troops who recaptured the island, declared organized resistance at a halt on 10 August 1944, and Fleet Hospital No. 103 moved ashore to set up its facilities. Fleet Hospital 103 was redesignated as U.S. Naval Hospital Guam on 4 January 1946; it was again redesignated U.S. Naval Hospital, U.S. Naval Medical Center Guam on 15 March 1946. Fleet Hospitals No. 111 and 115 were later put ashore on Guam as was Navy Base Hospital No. 18 to support Navy and Marine Corps activities during the later part of 1944 and early 1945. At the end of the war, the Base and Fleet hospitals were combined into one medical center. The 22nd Army general hospital remained in operation until October 1949, at which time the Navy assumed responsibility for hospitalization of all military personnel and others entitled to medical treatment.

On 1 July 1950, the Department of Interior assumed control of the Island vice the Navy Department and the Guam Memorial Hospital, which had been established at the end of the war, passed from the management control of the Navy to the management control of the Guam government. The Navy medical center was disestablished at the same time and on 7 August 1950, the naval hospital as a subordinate command of the medical

center, became simply, Naval Hospital, Guam.

At the end of the War, when Fleet Hospital No. 111 was not needed it was used for the care of natives and was generally referred to as the Guam Memorial Hospital. A severe typhoon in September 1946 damaged many of the buildings of the former Fleet Hospital 103 so that the Navy and the Guam Memorial Hospital jointly occupied buildings of Fleet Hospital 111 and those buildings of Fleet Hospital 103 that were repairable. The buildings of the fleet hospitals were chiefly butler huts, of overseas steel construction. The entire facility was intended for temporary use and 2 years after the war a permanent hospital was urgently required.

By the late 1940's the population of Guam had been increased to more than 24,000 people. In the medical center, were reestablished a School of Nursing to train the native girls and also a School of Medical Practitioners as well as School of Dental Practitioners. These latter two schools were later redesignated as School of Medical Assistants and School of Dental Assistants respectively. Both were continued until disestablished by SECNAV 19 February 1951.

Fleet Hospital No. 111, originally designated Mobile Hospital No. 11, had been commissioned 6 December 1943 at Shoemaker, Calif. Organization and training programs were accomplished on that site. With CAPT D. O. Boeman, MC, USN, as the medical officer in command, preparations were made to transport the hospital overseas. On 21 August 1944, the hospital sailed on an Army transport from San Francisco. The unit was landed on Guam on 9 October 1944 and preparations were immediately begun in setting up a hospital. Captain Boeman was relieved 26 November by CAPT J. A. Perez,

MC, USN and on 31 December the hospital was ready to receive patients.

Fleet Hospital No. 103 was opened to receive patients on 1 April 1945. CAPT E. T. Kunkel, MC, USN, was the first commanding officer; he was relieved by CAPT J. D. Reeves, MC, USN, on 22 August 1945.

Base Hospital No. 18 began life as Lion 6 on 3 April 1944. It was planned as an advanced base personnel depot. CAPT W. D. Davis, MC, USN, was prospective medical officer in command. On 29 July 1944 the Lion unit, consisting of 36 officers and 291 enlisted men departed from San Francisco for Guam as the advanced echelon. This unit arrived at Guam on 29 August 1944.

Construction of a hospital was begun on 15 September 1944. The first patients were received on 11 October 1944 from the Third Marine Amphibious Corps. There were 60 patients in this group, plus ten Japanese POW's. The official commissioning ceremony was held 18 November 1944 at which time the patient census was 454. By 31 August 1945 a total of 18,952 patients had been admitted. The original 1,600-bed capacity had to be expanded in February 1945, accomplished by double decking beds in certain wards, which increased the capacity to 2,618. Between 4 and 12 March 1945, more than 2,400 patients were admitted; by the end of March, 3,711 patients had been admitted during the month--a daily average of 120. Evacuations were conducted through the Island Command evacuation officer. Patients were evacuated both by sea and air in a rapid but orderly manner. As of midnight 31 March 1945, 2,536 patients had been evacuated during the month, and 1,164 had been returned to duty. During April, the patient load was reduced somewhat but with beginning of the Okinawa Campaign, in May, the total admissions were up again to 3,697. This hospital was the first to be reestablished on Guam after its recapture.

Almost as soon as the war was over, recommendations were made for the construction and establishment of a permanent-type hospital facility to replace the temporary buildings of the Fleet and Base hospitals. The Guam Memorial Hospital was a subordinate command of the Navy Medical Center. In the late 1940's, it was proposed that a new memorial hospital be constructed primarily for the purpose of providing medical attention to the native population. It was believed that a Memorial Hospital would eventually become a semiprivate civilian institution, providing not only hospital facilities but a school of nursing. The new and present hospital was dedicated 2 November 1954.

On 26 February 1969, the Third Marianas Islands District Legislature passed Resolution No. 28-1969 titled "A Resolution Relative to Expressing Sincere Gratitude and Appreciation to the Personnel and Staff of the United States Naval Hospital at Guam for Their Conscientious and Dedicated Service, Assistance and Treatment of Residents of the Marianas Islands District.

"Whereas, under arrangement with the United States Department of the Interior, facilities at the U.S. Naval Hospital on Guam are made available to treat illnesses and injuries of citizens of the Trust Territory of the Pacific Islands, where adequate medical facilities do not exist in the Trust Territory; and

Whereas, over the past years, many citizens of the Trust Territory have had the opportunity to receive treatment at the U.S. Naval Hospital on Guam, and the availability of this facility has undoubtedly saved many lives of citizens of the Trust Territory; and

Whereas, this body not only desires to give due recognition to the existence of this facility, but also to the dedication and conscientious manner in which the personnel strive to carry out their duties in the treatment of patients for illnesses and injuries; and whereas, if this facility had not been available for use by citizens of the Trust Territory, many lives would have been lost and scores of others would have suffered prolonged periods of confinement; and

Whereas, in full recognition and appreciation to the personnel and staff of the U.S. Naval Hospital, we, the elected representative of the people of the Marianas Islands district, think it fitting to take this opportunity to express our sincere gratitude and appreciation for a job well done;

Now, therefore, be it resolved by the Third Marianas Island District Legislature that our sincere gratitude and appreciation be and hereby are expressed to the personnel and staff of the United States Naval Hospital on Guam for their conscientious and dedicated service assistance and treatment of residents of the Marianas islands district; and

Be it further resolved that the President certified to and the Legislature Secretary attest the adoption hereof and thereafter transmit copies of the same to the Secretary of the Navy; the Surgeon General of the United States Navy; the Honorable Rear Admiral Philip P. Cole, Commander Naval Forces Marianas; the administrator of Naval Hospital, Guam; the Governor of the Territory of Guam; the High Commissioner of the Trust Territory of the Pacific Islands; the District Administrator, Marianas; and the District Director of Health Services, Marianas.

Passed by the Third Mariana Islands District Legislature, 26
February 1969.

Signed Vicente N. Santos, President

Signed Daniel T. Muna, Legislative Secretary."

GUANTANAMO BAY, CUBA

The present Naval Hospital, Guantanamo Bay, was commissioned 24 September 1956.

It is said that Christopher Columbus, on his second voyage to America, spent the night of 30 April 1494, in Guantanamo Bay. Apparently he was not too impressed, for he left the next day. Subsequently, the Bay was used by a succession of pirates, privateers and fisherman.

The first official attention of the United States government was focused on Guantanamo Bay in 1898, when a battalion of Marines landed on Fisherman Point to establish a base of operations for the campaign against Santiago de Cuba, 40 miles to the west. The Marines remained camped on this site for about 2 months but excepting for a few skirmishes with Spanish troops, no major battles occurred. However, a Navy medical officer Assistant Surgeon J. B. Gibbs was killed during one of these skirmishes.

Following the war with Spain, it was evident that Guantanamo Bay would be valuable as a coaling station and a base of operation for the Atlantic Fleet, particularly in the winter months when the Fleet was in the Caribbean. The land on which the Naval Operating Base and the Naval Hospital are now located was leased to the United States, in 1903, by the newly-formed Republic of Cuba. The lease agreement provided for the establishment for a coaling station and involved a total 28,821 acres of which approximately 9,000 acres were covered by water. A subsequent treaty, negotiated on 29 May 1934, had the effect of giving the United States a perpetual lease on the base.

According to interpretation it can be voided only by the abandoning of the area by the United States, or by the mutual agreement between the

two countries. The United States has exercised control over Guantanamo Bay, without actually owning it, since 1903. Its sovereignty, however, still rests with Cuba. Navy Medical facilities have existed at the Navy Base since occupation of the territory. During most of this period the medical facilities have been referred to officially and unofficially as a naval hospital. During much of the time, however, particularly prior to World War II, the facilities were more in the nature of a large dispensary than of a hospital. Considerable expansion of the Navy Base and concomitant expansion of the medical facilities were required during World War II when Guantanamo became a focal point as a base for the protection of the Atlantic entrance of the Panama Canal.

The station dispensary was redesignated 1 June 1946, as a U.S. Naval Hospital, with CAPT T. M. Crossland, MC, USN in command. At that time, there were 27 buildings comprising the hospital complex all of wood construction some built as early as 1913; many had been built, of course, during the World War II. The hospital buildings, some of one-story and some of two-story heights, were not uniform, additions having been made resulting in several buildings being joined by covered screened corridors. The buildings and corridors were so close together that they constituted a serious fire hazard.

Shortly after its designation as a naval hospital, recommendations were made to construct a permanent, fireproof facility. During 1946, a new site was chosen but no construction was begun. Each year following until 1950, continued recommendations for the construction of new hospital were made and estimates prepared. Between 1951 and 1955 new estimates,

new sites, and new plans were recommended but it was not until 11 January 1955 that CAPT T. I. Moe, MC, USN, the commanding officer, turned the first spadeful of earth at a ground-breaking ceremony on Caravela Point for the new hospital. The hospital was completed and ready for occupancy on 1 September 1956 but was not commissioned until 24 September. The main hospital building, comprised of 57,400 square feet, contains 100 beds and is built as a two-story structure of reinforced concrete with concrete masonry units. The nurses quarters has accommodations for 11 nurses; it is a one-story structure of reinforced concrete. The Hospital Corps quarters is large enough to accommodate 60 hospital corpsmen. This building is a two-story structure also of reinforced concrete.

In 1942-43 a complete, underground hospital was built on station. Located in a shallow valley at the base of a low hill, the hospital, consists of four connected, reinforced concrete, quonset-like, huts. It is covered with a substantial layer of earth on which grows the material vegetation of the surrounding area thus rendering it inconspicuous and practically bomb-and hurricane-proof.

Each unit of this underground unit has the capacity of approximately 30 beds, with galley and storage spaces to make it a self-contained hospital. Two of the structures have operating facilities and, in addition, X-ray equipment. The entire unit is equipped with diesel generators to furnish partial air conditioning and electric current. Normally, electricity and water are furnished by the base utilities. The emergency water storage in each structure is provided in storage tanks.

Normally, the underground hospital is kept in a permanent state of readiness for emergency use in case of hurricane or fire, but occasionally it is used as an overflow ward to take care of overcrowding in the main hospital. In a hurricane emergency, there is space available for as many as 400 people.

HOUSTON, TEXAS

The Naval Hospital, Houston, Texas, was constructed for use during the emergency of World War II and designed to be adaptable for use by the Veterans Administration after the war. The site was selected 15 March 1944 and on 26 April 1944 the President approved the acquisition of the Herman Estate, located about five miles southeast of the center of Houston. Construction was begun immediately to provide a 1,000-bed hospital, with 500 beds in permanent and 500 in temporary buildings. On 10 May 1945, the Federal Board of Hospitalization recommended the hospital be designated as a permanent naval hospital and this recommendation was approved by President Truman on 1 June 1945.

The hospital site comprising 118 acres, was acquired at no cost to the Government; it was paid for by contributions totaling \$221,600, donated by 353 of Houston's leading citizens. The deed to the land was presented to the Navy on 12 August 1944. The schematic plans of the hospital were developed by CDR James B. Butler, MC, USN in conjunction with Mr. Frederick W. Southworth, architect, in BUDOCKS. The firm of Finn, Cummins and Taylor, of Houston Texas, prepared the architectural and engineering plans for the hospital which was built of steel frame and masonry construction. CAPT Leslie B. Marshall, MC, USN, was designated as the prospective medical officer in command.

The cornerstone was laid on 10 March 1945 with Dr. Paul W. Quillian, First Methodist Church of Houston as master of ceremonies. CAPT C. L. Andrus, MC, USN, Head of Planning Division, BUMED placed a sealed copper box containing historic documents in the cornerstone. Representative Albert Thomas of Texas introduced VADM Ben Morell, USN, Chief BUDOCKS,

who delivered the principal address. Present at the cornerstone laying ceremony were Major General Richard Donoca, USA, RADM A. C. Bennett, USN, RADM J. T. Mathews, USN, RADM P. W. Foote, USN, CAPT W. J. Riddick, MC, USN, CAPT L. B. Marshall, MC, USN, CAPT R. F. McCall, MC, USN, CDR J. B. Butler, MC, USN and LCDR L. F. Southerland, CEC, USNR. SECNAV on 14 July 1945 established the naval hospital as a command with CAPT L. B. Marshall the first commanding officer. Construction had not been completed sufficiently to permit admissions of patients but it was considered advantageous to have the project established as a command.

Commissioning ceremonies were held 4 September 1946, a Wednesday, and CAPT C. W. Brunson, MC, USN, then became medical officer in command.

The hospital site sloped gently from north to south and originally was open land except for a thickly wooded area at the northwest corner of the site. The hospital faces Marlborough Avenue on the north with Alameda Road and Cambridge Street and Old Spanish Trail forming the eastern, western and southern boundaries, respectively.

The main group of buildings is in fact, one building, and covers an area 528 feet in depth by 647 feet in width. The central structure, housing administrative offices and clinical services, is 7 stories in height. Altogether, there are 40 structures of non inflammable construction comprising the hospital complex; 14 single-story, pavilion-type, ward buildings of concrete block construction are attached to the main ward buildings by long corridors; the main group of buildings is air conditioned and the pavilion ward buildings are ventilated by attic fans.

The fire department, laundry, boiler plant, greenhouse, incinerator, paint shop, carpenter shop, and other service buildings are located somewhat removed from the medical services building. Dormitories for bachelor officers and nurses and enlisted personnel as well as quarters for married officers are located at the western side of the reservation. Recreation facilities include a swimming pool with bathhouse, several tennis courts, a softball diamond, and a baseball diamond. The external finish of the hospital buildings is sandstone and buff brick. Interiors are finished in pale green with a generous use of glazed tile walls composition floors and sound-absorbent ceilings. Living accommodations for seven married officers, 24 bachelor officers, 50 nurses and 128 enlisted men 128 waves, and 120 civilian employees were available.

The naval hospital was located approximately 5 miles in a southeasterly direction from the center of Houston. Nearby is the new \$100,000,000 Texas Medical Center. The hospital was disestablished on 15 April 1949, and transferred to the Veterans Administration on that date.

JACKSONVILLE, FLA.

The Naval Hospital, Jacksonville, Fla., was constructed to provide support to the Naval Air Station at the same location. Construction of the hospital began early in 1941. The medical facility originally was planned as a Navy Dispensary but the expansion of the air station required larger medical service, and the naval hospital designation was approved 17 March 1941.

The Naval Hospital, Jacksonville, was commissioned on 1 July 1941, and its first commanding officer was CAPT Lester Pratt, MC, USN. The hospital is located on Mustin Road in the southeast section of the Air Station and is within 200 yards of the St. Johns river. The location is ideal for hospital purposes, somewhat removed from the major activities of the air station and provides a quiet and restful atmosphere for the care of patients.

The total acreage at the time of commissioning was slightly more than 57 acres. With the necessary expansion, during World War II, the hospital compound was enlarged, in 1943, so that it then occupied a space of 85.78 acres.

The average daily patient load rose from 74 in 1941, to 600 in 1942; 800 in 1943; 1,072 in 1944; and reached a peak of 1,825 in July 1945. In 1964, the capacity was 699 beds, with the capability of expansion to 968 beds. The hospital furnishes major medical support, not only to Jacksonville, but also to the Naval Air Station, Glynnco, Ga. Between 1 January 1951 and 31 December 1963, 105,346 patients were admitted to the hospital, an average admission rate of more than 8,000 patients a year. The original naval hospital was of temporary construction

and intended for a useful maximum life expectancy of 10 years. That life expectancy was extended to more than 24 years before the new and present hospital was constructed.

In January 1966, a contract was awarded to William E. Arnold Company of Jacksonville for the construction of the new 400-bed replacement hospital at a total cost of \$6,900,000. The new hospital is located at a site near the original facilities but construction was planned so that interference with continued patient care of the old hospital would not be encountered.

The hospital was designed by Reynolds, Smith and Hills of Jacksonville, Florida. The new hospital is dominated by an 8-story building without a basement. No basement is included in the hospital because of ground conditions at the site.

The design concept centers around a large block at ground level with a tower unit rising above. The ground floor contains all outpatient clinic and emergency room facilities as well as necessary ancillary and administrative functions. The second and third floors are T-shaped. The second floor contains additional administrative offices, patients welfare and recreation spaces, dental clinic, general-purpose conference rooms and classroom spaces. The surgical suite, surgical nursing units and intensive care facilities are on the third floor. The fourth floor is rectangular in shape and it contains neuropsychiatric facilities, occupational therapy and nursing units. All nursing units are contained on the fourth through the eighth floors with the obstetric facilities, nursery, and postpartum patients occupying the fifth floor. The basic concept for the nursing units consists of bedrooms on the perimeter of

the tower with ancillary facilities contained in the central core.

Automation and mechanization were incorporated into the planning of the new hospital and an automatic tray conveyer system serves the entire building from the central sterile supply area.

A formal ground breaking ceremony incident to the construction of the new hospital was held on 5 February 1966. Included in the official party was Charles E. Bennett, Representative from Florida.

The Naval Hospital, Jacksonville, is located approximately 15 miles from the center of the city of Jacksonville. The Bureau was represented by RADM R. O. Canada, MC, Deputy Chief of BUMED. There were 59 buildings within the complex of the original hospital. There were 2½ miles of lime rock base bituminous surface roads and 2,100 feet of concrete sidewalks.

Characteristic of Florida, the hospital grounds are not at much elevation above sea level. However, there is some elevation of the hospital grounds providing for a natural drainage. There is a maximum elevation of 27 ft. above minimum low water mark.

The original hospital complex contained quarters for 7 married officers, 86 nurses, 372 enlisted men and a Marine guard of 13.

The new naval hospital was dedicated 9 December 1967. The occasion was marked by an address of Representative Charles E. Bennett (Fla.) and CAPT W. S. Baker, Jr., MC, USN, was the first commanding officer. The new hospital occupies approximately 2 acres as opposed to the nearly 50 acres the old hospital buildings had occupied. Many of the old buildings were torn down to make space for a 250 car parking lot. The new hospital serves a total population of 140,000 military personnel, dependents and

retired people. The majority of the work load is in the outpatient department.

The main lobby is walnut paneled with one wall of white marble. The building contains 234,932 square feet, constructed of structural steel frame work on a concrete foundation; exterior walls are of precast concrete panels.

A story in the Florida Times-Union of 24 January 1970 reported a fire which resulted in a loss of electric power in the hospital. The apparent cause of the fire was a short in a power distribution panel. Damage was extensive to the electric system although smoke damage was minor. Electric power was off for 2 days following the short in the distribution panel and during that period emergency generators, candles, and battle lanterns provided illumination. When the power went off surgeons were performing two emergency operations. Hurriedly, portable, battery-operated battle lanterns were rigged and the operations were completed with no mishaps. There were 386 patients on board at time of the blackout.

KEY WEST, FLA.

The first naval hospital at Key West, Fla., was in the remodeled Hargrove Seminary, purchased from that religious organization and commissioned in 1918; it had a bed capacity of 150. This hospital was bounded by White, Florida, United, and Seminary Streets, respectively, and was used until July 1926 when it was decommissioned.

Reactivation of this hospital was considered prior to the beginning of World War II, but no decision was reached. After an inspection of the property in February 1941, and the conclusion reached that larger facilities would be needed. A site for the construction of a new naval hospital was selected at the eastern end of Key West Island. SECNAV, on 15 August 1941, approved the new site, 5 acres of which belonged to the Navy and an additional 9.7 acres were purchased at a cost of \$57,401.

The architect for the new hospital was Harold D. Steward, and construction began on 21 August 1941. The hospital was completed and commissioned on 15 October 1942 with CAPT J. W. Allen, MC, USN, in command. During 1943, the capacity of the hospital was increased by the addition of 4 single-story concrete block ward buildings erected in the rear of the main structure.

The capacity of the permanent structure is 275, including 30 beds for dependents. In an emergency, the estimated bed capacity is 518. The highest census of patients reached during World War II, was 532.

The main building of the hospital was constructed of reinforced concrete, consisting of a central administration building of three stories with a two-story wing on each side extending toward the sea and a L-shaped subsistence wing of one story in the rear. The hospital

reservation includes 14.7 acres of low marl and sandy land, bordered on the East by the ocean, on the North by the overseas highway, on the West by Ocean Boulevard and on the South by a private estate, park-like in character. The hospital reservation contains living accommodations for 7 married officers, 16 nurses and 78 enlisted men. The hospital is located about $3\frac{1}{2}$ miles northeast of the city of Key West. Utilities are obtained from the city, with an auxiliary diesel electric plant at the hospital for emergencies.

The hospital provides medical support to the Naval Base at the same location.

The Naval Hospital, Key West, is in the path of frequent hurricanes. The construction of the hospital was planned to provide maximum protection from such heavy winds. Among the many hurricanes that have struck there was the one reported on 21-22 September 1948, when Key West was hit by a hurricane of maximum intensity. Sustained winds of 120 miles an hour and gusts as powerful as 160 miles an hour were reported. During this hurricane, no casualties to Navy personnel were reported and property damage, for the most part, was confined to the blowing off of roofs of some of the outlying buildings.

Key West is an island about 2 miles wide and 4 miles long. It is the last in a chain of the Florida Keys and is 156 miles from Miami, but only 90 miles from Havana, Cuba. Technically, it is not in the tropics, but its climate, with an average temperature of 76.8°F. , is tropical and its physical appearance and atmosphere are Caribbean rather than continental American. The foreign quality of Key West is emphasized

by the fact that the Spanish is heard on the streets almost as frequently as English.

Prior to World War II, Key West was dependent almost entirely upon rainwater for its water supply, which was stored in cisterns. Since World War II, the island has been supplied by water brought by pipe line from Florida City, 125 miles away on the mainland. Access to the mainland over the Keys between Key West and Florida City is by an overseas highway.

Key West has a rich and varied history. It was discovered in the early 1500's by Ponce de Leon; the island probably remained uninhabited until about 1700. Known as Bonte by the Indians, it was generally referred to as Key West by the Spanish. As a part of Florida, Key West was obtained from the Spanish, in 1819, by purchase. The first-known official Navy visit to the island after it became United States Territory was in 1823, when Commodore David Porter used the island as a base during the Navy's efforts to rid the Caribbean of pirates.

For the next 30 years, Key West was a frequent port of call by Navy vessels, but it was not until 1852 that a system of reef lights was provided to make navigation less hazardous. Key West was of relatively little importance to the Navy during the Civil War but by the 1880's the population of the city had grown to 18,000, making it the largest in the State at that time. Cigar factories provided the principal occupation, closely followed by the fishing industry. In 1886, half of the town was wiped out by fire; when labor troubles followed, the majority of the cigar manufacturers moved to Tampa.

Accessible only by water, for the next 25 years Key West was isolated from and seldom visited by mainlanders. Considerable activity was renewed during the Spanish-American War, which did not last long enough for any considerable build up by Navy activities. In 1912, a railroad was built over the keys to Key West at a cost of \$50,000,000, and more than 700 lives; automobile ferrys were operated directly to Cuba and tourists provided an economic bonanza that raised the population to 22,000. A considerable buildup of Navy facilities on Key West during World War I, was followed after the war by huge reductions so that by the early 1930's the population had been reduced to about half of the World War I population.

In 1934 and 1935 the island was exploited as a tourist center and during those 2 years more than 40,000 tourists visited the island. In September 1935, one of the most violent hurricanes on record struck the keys and demolished the railroad. Again Key West was virtually cut off from the mainland when the railroad was not rebuilt. For the next 3 years, the island was served only by vehicular ferry boats which required 8 hours for passage from the mainland to Key West. The overseas highway, rebuilt in 1938, stimulated tourist travel again and also interested the Navy in reestablishing a base there. The overseas highway had one bridge extending for 7 miles without touching land. During its first year of operation it was used by 417,000 people and the number has been increasing yearly ever since. The city of Key West depends mostly on its tourist trade, the Navy and fishing for its income. The old Navy Yard was reopened in 1939 and continued to expand in all directions.

LEMOORE, CALIF.

The Naval Hospital, Lemoore, Calif., commissioned as a naval hospital on 1 July 1968. CAPT J. A. Niforopulos, MC, USN, was the first commanding officer. The purpose of the hospital is to provide medical support to the Naval Air Station located at the same place. Prior to commissioning as a naval hospital the medical facility had functioned as a dispensary in support of the air station.

This hospital had many problems soon after the commissioning as a naval hospital, since many of the necessary expenditures prior to its commissioning were funded by the air station. When it became a naval hospital, and under the management control of the Bureau of Medicine and Surgery, most of these costs had to be borne by the Medical Department. The medical support provided by the new naval hospital were similar to those medical services provided to the air station and dependent population that had been provided as a Navy dispensary. A great deal of austerity was required including the reduction of selectivity of drugs and supplies resulting in limiting the operating capability of the hospital. There were many complaints by patients including Congressional intervention.

Not only this problem but many others occurred. Food service, in November 1968 was reported as being highly unsatisfactory. The procedure was to transport meals for patients from the general mess of the Air Station in an antiquated, heated food cart. Food arrived to the patients--the hot foods, cold, and the cold foods, hot--and such foods as salads and desserts had lost much appeal by the time they were received by the patients.

LONG BEACH, CALIF.

Ground was broken for the present Naval Hospital Long Beach, on 30 April 1964. Planned was a new 350-bed hospital it was expected to be completed in January 1967 at a cost of \$7,500,000. The hospital site was given to the Navy by the city of Long Beach and is located at the intersection of Carson Street and the Gabriel River Freeway.

The hospital was designed by Hugh Gibbs, architect, of Long Beach. Pile foundations were constructed by the J. Putman Henck Corporation of San Bernardino, Calif. The building contractor was Electronic and Missile Facilities, Inc., of Valley Stream, N.Y., under the supervision of the Navy Facilities Engineering Command. The hospital was planned as the 4 "story structure with a basement containing many innovations to naval hospitals. Open wards, previously common to naval hospitals, were replaced by one-, two- and four-bed rooms.

The hospital utilizes a central service system and is equipped with automatic tray conveyors, pneumatic tubes and separate medical and surgical intensive-care units. All of the nursing units are on the second, third, and fourth floors. The surgical suite, clinics, administrative spaces, and ancillary services are on the ground floor and in the basement. The purpose of the hospital is to provide medical support to the Fleet in the Long Beach/San Pedro area as well as a total of more than 200,000 active duty, retired and dependents living in the area. The new hospital was commissioned on 1 February 1967 with CAPT P. R. Engle, MC, USN, in command.

The Long Beach Press Telegram of Thursday, 2 February 1967 reported the commissioning of the new naval hospital:

"Long Beach's new naval hospital, described as a magnificent accomplishment and the most modern in the United States, was commissioned Wednesday. More than 2,000 witnessed the formal commissioning ceremony of the handsome structures in front of the hospital's main entrance at 7500 East Carson Street. The long-awaited moment came at precisely 1424 with the setting of the first watch. 'With the watch set, we once again have a Naval Hospital, Long Beach, commented CAPT Paul R. Engle, the hospital commanding officer.' Captain Engle was presented with the Legion of Merit, for his service as commanding officer of the hospital in USS Repose, duty preceeding this command."

Representative Craig Hosmer of Long Beach was the principal speaker in commissioning the hospital. Mr. Hosmer said that the new hospital would be responsible for inpatient and outpatient care of 47,000 active duty personnel and their 30,000 dependents. It was estimated that the salaries, wages and military pay of the more than 500 Navy staff and civilian employees would total more than \$3,000,000, annually, to the benefit of the Long Beach community.

The hospital was called the most modern in America. Hosmer stated that the facility will function with a number of responsibilities including, 1) a debarkation hospital for evacuees from the Pacific war zone; 2) a blood donor center and a blood bank; 3) a facility for inservice training

for hospital corpsmen and dental technicians; 4) a place for physical examination for Naval Academy candidates; and 5) a center to provide for mass casualty handling, to meet local civilian and military emergency requirements.

In October 1969, in a special report from the commanding officer to the Chief of the Bureau, it was estimated that the naval hospital was then serving a population between 160,000 and 200,000 people including some 42 separate Navy commands ashore and more than 100 ships of the Fleet. He reported that the originally authorized bed capacity of the hospital of 350 had been increased to 404 by the use of double deck bunks in several spaces. The census was reported as running just over 400 in the previous 2 months.

The commanding officer reported that security posed a problem and that no fence, no gate, or security personnel were on board at the hospital reservation. The Navy Base was responsible for the hospital security but the minimum time expected for personnel from the base to arrive at the hospital would be an hour if an emergency security problem arose. No problem had existed up to that time but owing to the civil disturbances that had occurred in various cities in the late 1960's the commanding officer was apprehensive that security problems would arise in the event of civil unrest in the hospital vicinity.

Captain Holloway, who had been commanding officer of the hospital for only 2 months when he made his report, had several recommendations relative not only to the Naval Hospital, Long Beach, but also in future construction. These included, 1) the building in of an over ride system in the public address unit so that emergency announcements might be made

to all parts of the hospital even though the local loud speaker might have been turned off; 2) the provision of utility valves in steam, water and gas lines ought to be provided so that the entire system would not need to be shut off in case repairs were needed to parts of the system; 3) the provision of a helicopter landing pad should be included as an essential part of every hospital's minimum construction planning. This hospital had an emergency landing pad on a nearby baseball diamond, which was useful, but provisions should have been made for a closer location to the hospital; and 4) the two-, three- and four-bed wards were mildly criticized from the standpoint of nursing efficiency.

Captain Holloway reported that 7 earthquakes had shook Long Beach in the past 2 weeks (Oct. 1969). No damage to the hospital buildings resulted, with the exception of a few patches of .5-mm. cracks that appeared around doors and other stress points.

This new naval hospital was not the first to be constructed in the Long Beach area. A 300-bed naval hospital in the San Pedro/Long Beach area was authorized 17 March 1941 and a site was selected on the eastern outskirts of Long Beach, on Anaheim Street, in April 1941. There was local controversy over the selection of this site, particularly by people interested in locating the hospital in the Palos Verdes Hills near San Pedro. This controversy delayed the decision on the selection of a site, and it was not until 25 September 1941 that a tract of 100 acres, on the extension of Anaheim Street at the junction of Bellflower Boulevard and 7th Street, was procured by condemnation proceedings. The former owners, Mrs. Susanna B. Bryant and her brother, Mr. Fred H. Bixbey, sold the site to the Navy for \$150,000.02.

The architectural and engineering contract was awarded to Mr. Claude Beelman, of Los Angeles, who prepared the plans for the hospital. Construction of the hospital proceeded rapidly despite war-time shortages of materials and on 15 December 1942, the hospital was commissioned with CAPT W. N. Michael, MC, USN, as the first commanding officer.

It was immediately apparent that the 309 beds in the permanent buildings of the hospital were inadequate to meet the needs of the Navy. On 26 June 1943, the expansion of the hospital was begun by the construction of 24 temporary ward buildings with a bed capacity of 850. The completion of these wards provided a total of 1,125 beds but even these were far from adequate to care for the greatly expanded need during World War II. In May 1944, the approval for the provision of an additional 500 beds was made, so that at the end of the war, there was a bed capacity of 1,691 with an emergency capacity double of that by using double-deck bunks. The peak census of patients during World War II was 3,877, many of whom were on leave or subsisting out.

The hospital was located approximately 4 miles from the central business district of Long Beach and 6 miles northeast of the Navy landing. The hospital reservation was on relatively high, flat land with the exception of a depression in the central and eastern sections of the northern border where a golf course, gardens, incinerator, animal house and brig were located. The administration building faced 7th Street to the south, and it was of the reinforced concrete construction of 4 stories in height, measuring 223 feet across the front, by 106 feet in depth. Three-story ward buildings to the right and left of the ad-

ministration building extended forward toward 7th Street. To the rear of the administration building was a three-story structure containing mess halls and clinical units. A swimming pool, bathhouse and other service buildings were in the central area to the rear of the administration building. The hospital, during World War II, provided living accommodations for 13 married officers, 6 married enlisted men, 46 bachelor officers, 90 nurses, 370 enlisted men, and 66 Waves.

During the period from 16 December 1942 until 31 December 1946, there were 78,157 patients admitted to the hospital. Of these, 76,926 patients had been discharged by 31 December 1946, leaving a census of 1,231. In 1947-48-49, the patient census remained at or above the 1,000-patient level. Early in 1950, the Nation increased its economy cry, a movement that had been gaining momentum since the heavy expenditures during the War period. On 1 February 1950, rumors began to circulate that the Naval Hospital, Long Beach, was to be closed. This rumor was confirmed by telephone call from BUMED on the next day. Routine admissions were stopped as of 15 February, with only emergency patients being admitted after that date.

The citizens of Long Beach, including the press, Veterans organizations and other groups began public protest against the closing of the hospital and appealed to the Secretary of Defense to keep the hospital open either as a navy hospital or as a Veterans Administration Hospital. It was decided and arrangements were made to transfer the hospital to the jurisdiction of the Veterans Administration, which was accomplished effective as of 1 June 1950. The hospital was decommissioned despite the opposition of the active-duty Navy personnel,

including the Bureau of Medicine and Surgery. Despite all protests, the hospital ceased to exist, at that location, at that time. The folly of closing was realized shortly thereafter, when the United States became involved in the Korean crisis but it was not until 17 years had passed that a new hospital was provided for the Long Beach area.

MARE ISLAND, CALIF.

The Naval Hospital, Mare Island, Calif., was constructed in 1870, but medical services had been provided to the Fleet and to the beginnings of a Navy Yard at that location for nearly 20 years previously.

Mare Island is located at the northern end of San Francisco Bay. It first attracted the attention of the Navy in 1850, when LT Simon F. Blunt, on special duty and acting under orders of Commodore Sloat, CINCUS, Pacific Fleet, examined and inspected possible sites in San Francisco Bay and nearby waters for the suitable location of a navy yard. Two locations especially considered were those of Mare Island and Sausalito. Sausalito had an attraction for men and vessels of the old Navy and for many years the storeship Warren was anchored there as a station or guard ship for San Francisco.

Mare Island was the choice, however, and was purchased from Aspinwall and Company, 4 January 1853 for \$83,000. In September 1853, the beginning of construction of a floating drydock was commenced. A year later, CDR D.G. Farragut, USN, took command of the Navy Yard. A diary, in the handwriting of Commander Farragut, records:

Sept. 16, 1854: Took charge of the island and forthwith ordered all squatters off. Weather clear.

Sept. 18, 1854: Ship of war, Warren came up to be moored as a storeship for the accommodation of the yard.

The medical officer of the Warren was Assistant Surgeon John M. Browne. No quarters for the accommodation of the sick were immediately erected ashore and the ship served both as a dispensary and hospital for the few officers and men employed there until October 1857. On

28 October 1857, the Warren was relieved by the Independence, which ship took up duties as station and receiving ship, a task continued until 2 Nov. 1912.

The Independence performed the same duties as had been accomplished by her predecessor. On 6 January 1862, the medical officer, Surgeon W. S. Bishop, wrote to the Surgeon General as follows:

"Sir:

Until this time the medical stores have been kept on the same floor and in the same building with the Navy storekeepers and pursers' stores and there has not been any room assigned as a dispensary. As a consequence, medicines and stores for daily issue in the yard have been kept, some at the surgeons quarters, some again at the steward's quarters, and still others aboard the Independence, in every way an inconvenient arrangement.

"I found a storeroom and dispensary nearly completed and ready for use on my arrival and I will occupy them if rains permit, this week.

"The dispensary furniture now on charge, is in a most dilapidated and worn-out condition, and in quiet times I would have to ask to have them surveyed."

It appears that this time, that is, January 1862, marks the beginning of the provision of medical facilities ashore in the Mare Island Navy Yard. The Independence, however, was continued in use as a sick quarters though it appears considerable use was made of storage spaces, specifically allocated to the Medical Department, on shore. It was not until the next year, 1863, that temporary hospital facilities were provided by the commandant of the yard for use as a temporary hospital. This temporary facility was provided use of what

had been an old grainery, by removal of its equipment and converting it into a hospital. This was accomplished late in October 1863.

In the preceding year, Surgeon Bishop had corresponded frequently with the Chief of BUMED, strongly urging the provision of hospital accommodations ashore, but evidently the requirements of the Federal Forces during the Civil War precluded any action from Washington. The Chief of the Bureau was not immune from understanding the need for the accommodations of the sick ashore, but in 1862 and 1863 there was relatively little Navy activity on the Pacific coast. The chief of the Bureau, William Whalen, answered Dr. Bishop's correspondence and suggested the temporary use of structures in the Navy Yard, not otherwise being used.

The conversion of the grainery provided some hospital facilities, but there were objections to it. It was described having a bleak exposure, it was pointed southwest to the prevailing cold, heavy, summer winds and its level, flat surface made drainage, sewerage, and surface watershed difficult; also, it was too close to the new Marine barracks, then under construction.

Dissatisfied and disappointed as he was, Surgeon Bishop reported in January 1864, that the temporary hospital provided a convenient and fairly comfortable place for 24 to 30 patients. Personnel problems dogged Dr. Bishop from the start. He reported in October 1864:

"I am carrying on the duties of cook and nurse, the former by an invalid Marine and the latter by an ordinary seamen from the USS Saranac whose time is now expired. It would be economy to transferred to the hospital, from one of the ships in this squadron, two contrabands

(escaped Negro slaves) for these duties.

The Chief of the Bureau, a month later, replied to Dr. Bishop and suggested that application be made to the Fleet Surgeon for help in performing the duties of the hospital.

It was not until November, a year later, that the following allowance was made: one cook at \$45 per month; 2 nurses at \$28 per month. A provision was made that the maximum number of nurses would be retained only when the crowded state of the hospital made it necessary.

Dr. Bishop then asked for a horse to help him cover long distances within the yard. This being denied, he applied for an assistant and in February 1866 Passed Assistant Surgeon George W. Woods arrived.

In 1868, the construction of a new, permanent hospital was commenced. Its plan and appearance closely resembled that of the then recently-completed, brick hospital at Philadelphia. They were more nearly sister hospitals than any two erected before that type of structures was adopted. The main ward building was completed and occupied in 1870. Until 1892, the Senior Medical Officer occupied an entire ward as living quarters and the assistant's rooms were over the entrance of the hospital.

In the Surgeon General's annual report for the year 1881, it was reported that important alterations had been made during the previous year in the internal arrangements of the hospital. These improvements included the repair and modification of sewers and the supplying of a new apparatus for heating and ventilating by steam. A new sewer was constructed of ironstone pipe, 10 inches in diameter,

and it extended along the rear of the hospital to join with an original brick sewer 250 feet from the southeast corner of the main hospital building. The sewer had a total length of 700 ft. with an inclination of one foot in 40. The heating apparatus consisted of a system of pipes and radiators supplied with steam by boilers placed 140 feet from the hospital in an addition to the gas house which addition was, itself, one of the recent improvements. The steam generated in the boiler passed through a 6-inch main contained in a trench of masonry underground from the boiler house to the basement of the hospital. Better ventilation was effected by large ventilators of galvanized iron, opening above the roof in each wing.

In 1889, the Surgeon General reported the condition of this hospital as being highly creditable. With certain repairs and improvements made during the year the hospital was functioning quite well. The point was made, however, that when the hospital was built no provision was made for separate quarters for the medical officer in charge. This provision was made at hospitals on the Atlantic Coast with the exception of Washington. At Mare Island, there were no houses that could be rented and the medical director was compelled to occupy rooms intended for a junior medical officer in a ward, which then could not be used for the sick.

The junior medical officer was required to use rooms on the first floor which should have been put to use for other than living quarters. This lack of family housing space caused considerable inconvenience and resulted in inadequate space to accommodate patients. The medical

officer making the report suggested that the patient load was increasing annually; therefore, provision should be made for quarters for the medical officer in charge to avoid crowded conditions and also to avoid the expense of transferring patients elsewhere. The pest house, which originally served as the medical facility for the yard, was reported in 1889 as being in a dilapidated condition without doors or windows and that it was regarded as a complete ruin, unworthy of repair and entirely unfit for further use. It was recommended that it be torn down and that a Ducker, Portable Field Hospital be substituted for the treatment of contagious diseases.

In 1898, the hospital was badly damaged by an earthquake and had to be condemned. The sick were removed temporarily to the north wing to the Marine barracks and remained there until the new structure was completed in April 1900. The Act of Congress authorizing the new building specified that the basement of the former hospital should be utilized, which limited the ground plan to the structure of 1870.

In 1905, the West wing, planned as a surgical unit, was completed. In 1908, five 18-bed pavilions were erected on a nearby hill. Little other construction was permitted until the outbreak of World War I. At that time, the main hospital building held a maximum of 212 beds. The 16 nurses occupied the old pest house and hospital corpsmen lived in tents. During World War I, 8 new ward buildings were erected, having a maximum capacity of 700, thus making a total bed capacity, under roof, of 1,000. Additional space for 500 patients was available in tent platforms.

At the close of World War I, there were 60 buildings on the hospital reservation consisting of 27 acres.

Mare Island is situated about 25 miles North of San Francisco, on San Pablo Bay, a part of the northern expansion of San Francisco Bay. A modernization project at the hospital was started in 1928 with the construction of a 5-story, L-shaped, reinforced concrete wing, extending to the northwest, at a cost of \$367,000. In 1939 and again in 1941, this wing was duplicated on the southeast side of the old hospital. Temporary buildings constructed during World War II, provided a total bed capacity of more than 1,000. During World War II, the Mare Island hospital was the West Coast center for neuropsychiatric patients. On 3 February 1943, the hospital, being overcrowded with mental patients, the State Mental Hospital at Napa, was leased by the Navy and became an annex of the Mare Island hospital. This institution, with a capacity of 256 beds, was returned to the State of California on 30 June 1946.

The Mare Island Hospital was also the West Coast center for the care of amputees. The Artificial Limb Department was housed in a semi fireproof building, constructed in 1945. The highest census of patients, reached during World War II, was 2,281. At the end of the war, the bed capacity was rated at 899, with 716 in permanent construction.

In the years following World War II, the hospital patient census was maintained at or above 500.

The name, Mare Island, is traced to a title bestowed by General Mariano Guadalupe De Vallejo, one-time owner, from a circumstance of his favorite mare having landed there after an accident to a ferry boat,

laden with horses, which capsized in mid stream. The island, itself, comprised an extent of rolling land, about 3 miles long with an average width of about a half mile. The island consists of about 936 acres. It is bounded on the West by San Pablo Bay, to the East and separated from the town of Vallejo, by Mare Island Straits.

The population of the island in 1880, was described in the annual report of the Surgeon General as consisting of some 513 officers, men, their families and servants, including the officers and crew of the receiving ship, Independence. Mare Island was considered an admirable location for purposes of the Navy Yard, it being removed from the coast giving it greater security and it had a sheltered waterfront of great extent with an ample depth of water. There was some concern that Mare Island Straits might fill up with debris from the Sacramento River and extensive dredging became necessary as early as 1879 to keep the channel open.

In February 1950 the Naval Hospital, Mare Island, was scheduled for decommissioning. The hospital, on 15 February, discontinued the admission of Veterans Administration patients and on 21 February received instructions to admit no more patients, except extreme emergencies. Military personnel in the area, requiring hospitalization, were to be referred to the Naval Hospital, Oakland.

The Artificial Limb Department and the Neuropsychiatric services were ordered transferred to Oakland by 30 June 1950. The transfer of NP Service was accomplished by 7 March, including the transfer of approximately 200 staff and patients.

On 14 March, a special Congressional Committee, headed by Representative L. Mendell Rivers and including Representatives Leroy Johnson, Calif., Paul W. Schaffer, Mich., Clyde Doyle, Calif., and L. G. Clemente, N.Y., arrived at the hospital to investigate the closing. The group was accompanied by the Surgeon General RADM C. A. Swanson and hearings were begun immediately. On 5 April, a revised operating bed capacity of the hospital, for the fourth quarter of fiscal year 1950, was established at 150. This figure was reduced on 29 May to 100 beds. On 15 June 1950, all previous restrictions on the admissions of patients were canceled. On the same date the transfer of the artificial limb department to Oakland was accomplished, including the transfer of 12 civilian employees, one medical officer, and one Medical Service Corps officer.

On 30 June, all hospital buildings except those required to operate a 100 bed hospital facility, were closed and all patients were housed in Building H73 formerly SOQ. On 30 August, the hospital was advised that the operating bed capacity would be raised in September to 550, and that additional expansion was anticipated in the near future. On 6 September a total of 500 beds was allocated to the Department of the Army. These were to be from the previously authorized 550 operating beds. The first casualties from Korea were received during September, at which time the first Army patients were also received. On successive dates, additional Army patients were admitted until at one time there was a total of 152 Army personnel hospitalized, the greater part of whom were combat evacuees.

On 8 November 1950, the revised operating bed capacity of the hospital was established at 650. On 29 November, it was increased to 778 with a mobilization bed capacity of 972. In December, the patient census reached 891. Double-decker bunks were installed and 1,116 beds were then available. During December 1950, 1,557 patients were admitted and 1,336 were transferred to hospitals nearer their home.

Between 1951 and 1955 the hospital operated at the authorized bed capacity. At the beginning of fiscal year 1956, the bed capacity was 325. This was revised several times, until at the end of June 1956, the operating bed capacity was 50. Rumors began to circulate that the hospital would be decommissioned. At the beginning of fiscal year 1957, the operating bed capacity was 50 but during that year the monthly average number of admissions was 188. In June 1957, there were 200 admissions for influenza alone.

MEMPHIS, TENN.

This hospital was authorized by the National Defense Act of 1942, approved 28 April. A 400-bed temporary hospital was proposed for construction at a cost of \$1,670,000.

The site of the hospital is included in a tract of 900 acres near Milington, Tenn., which was transferred from the Department of Agriculture to the Navy Department on 16 June 1942 for a Naval Air Technical Training Center and hospital. The naval hospital was established by order of SECNAV on 11 January 1943, and was commissioned on 17 March 1943, although parts of it had been in use for some months before it was opened formally. CAPT E. L. McDermott, MC, USN, was the first commanding officer. The erection of additional ward buildings, during World War II, more than doubled the bed capacity.

The general purpose of the hospital was to provide medical support for aviation units and ammunition depots in the area. During the war, the hospital had a rated bed capacity of 727 with emergency capacity of double that number. The original hospital occupied a tract of just over 200 acres adjacent to the Naval Air Station. All buildings, with the exception of the power plant and incinerator, were of temporary, wooden construction. The administration building was two stories high and faced south; to the rear of it are the clinical services buildings and the subsistence building all connected by corridors. Running at right angles to the main corridor was a long corridor on either side of which were 26 one-story pavilion-type ward buildings and other facilities. The hospital reservation during the war contained living

accommodations for 11 married officers, 14 married enlisted men, 3 married civilians, 24 bachelor officers, 33 nurses, 75 enlisted men and 28 civilians.

The hospital is located on U.S. Highway 51, on level ground with a slight elevation on the western end. During World War I, an Army Air Corps Training field, known as Park Field, was located on part of the site of the present Naval Air Technical Training Center. None of the facilities or buildings used at that time existed at the beginning of construction of the present facilities. Up to the end of November 1945, a total of 16,097 patients had been admitted. Utilities were furnished through the facilities of the Naval Air Station. At the close of the war, in 1946, the bed capacity was reduced to 250 beds.

Immediately after the end of the war, recommendations were made for the construction of permanent hospital facilities. These recommendations were continued year after year, but it was not until 1968 that ground was broken for a new 6-story, 230-bed hospital. Scheduled for completion in February 1971, a dedication ceremony was held 12 July 1968, with the Surgeon General VADM R. B. Brown in attendance. Completion was not accomplished by the target date. The new hospital site is near the old one and the old one continued to function during the construction of the new one.

The new hospital was designed by Jones, Allen and Moshall, of Memphis. Complete, it is the tallest structure in northern Shelby County. Contract for construction was awarded to Allen O'Hara Construction

Co., of Memphis. The first floor of the hospital, approximately 200 by 300 feet houses an extensive outpatient clinic. Five stories which rise from the south end of the building is composed 1, 2, and 4-bed rooms and medical treatment areas.

This hospital is not the first in the Memphis area. During the Civil War, from 1863 to 1865, a naval hospital was established in the old Commercial Hotel on the waterfront in downtown Memphis. This hospital was built in support of the Mississippi River Squadron and augmented the medical facilities available on the hospital ship, Red Rover.

MOUND CITY, ILL.

This naval hospital was established at Mound City, Ill. in support of the Mississippi River Squadron, during the Civil War. The hospital was active from 1862 until the late 1870's.

There was an important navy yard built on the Ohio river, at Mound City, which was very active during the Civil War and post war period.

The present town of Mound City has a population of about 1,700 people. During the Civil War, what with Army and Navy personnel there, the population numbered several thousand.

The building used for a naval hospital was a three-story brick structure. It is still standing and has been used for many purposes in the intervening years. It was customary for the hospital ship, Red Rover, to pick up patients from the Mississippi Squadron as far south as Memphis and return them to Mound City for treatment. Not only Federal troops, including both Army and Navy, but also rebel wounded were brought back to Mound City for medical attention.

A National Cemetery was established at Mound City, about 1 mile northeast of town in 1864, and it was directed by the President that the cemetery grounds be used as a National Cemetery for soldiers "who shall have died in the service of the country."

Not only was there a hospital at Mound City which was considered to be one of the largest military hospitals in the West but also another hospital, was established by the Army, at Cairo, about 9 miles down stream at the confluence of the Ohio and Mississippi Rivers.

The Naval Hospital, Mound City, was able to accommodate between 1,000 and 1,500 patients. The nursing care was largely provided by the Roman Catholic nuns of the Order of the Holy Cross. There is evidence the Mound City hospital was operated jointly or at least staffed by both Army and Navy medical officers.

NAPLES, ITALY

The Naval Hospital, Naples, Italy, was commissioned as a naval hospital 1 July 1968. The hospital continued the same function, previously provided, when it was designated as a station hospital.

The Naval Hospital, Naples, provides command and medical support to medical activities in the Mediterranean Fleet. It provides both inpatient and outpatient care to the Naval Support Activity at Naples and to other Navy personnel attached to the more than 50 military activities in the Mediterranean area.

The hospital has a normal bed capacity of 70, which may be expanded to as many as 88. The patients with chronic conditions requiring care beyond the hospital capabilities are transferred to larger Army facilities, elsewhere in Europe. The present hospital building was constructed, in 1966, and is occupied on a lease-rental basis. A dental clinic is in operation nearby and the senior dental officer has additional duty at the hospital. The Naval Hospital, Naples, operates an annex at Gaeta some distance away.

NEW ORLEANS, LA.

The Naval Hospital, New Orleans, La., was commissioned on 1 June 1943. The hospital was of temporary wooden construction and was established to provide medical attention to naval activities in the southern Mississippi River area. The hospital was established as a 400-bed hospital, necessarily largely increased and on VJ day 1945, had a patient census of 1,212. The hospital was deactivated in 1946.

The hospital in service during World War II, was not the first naval hospital in New Orleans. A naval hospital is known to have existed in the 1820's and again during the latter part of the Civil War. Unfortunately little information is now available relative to these hospitals.

Even before naval hospitals were authorized by the Act of 1811, several surgeons concerned themselves with frequently established makeshift hospitals at various locations, principally in navy yards. One of these concerned surgeons was Lewis Heermann. Dr. Heermann, who had gained considerable fame in the war with Tripoli, and who had been born and educated in Germany wrote to the SECNAV in 1810 asking for permission to establish a hospital at New Orleans. His general request was approved and in the late fall of 1810 he went to New Orleans for that purpose. New Orleans was the port of entry to the Mississippi River and was becoming increasingly important as a shipping point for products from the newly-acquired Louisiana Territory, which had been purchased only 7 years previously. In 1810, New Orleans was a small city of about 15,000 inhabitants.

On his arrival in New Orleans, Dr. Heermann established a residence and purchased a property facing the levee (then called the promenade publique) between the Rue de La Paix and the Rue de Caza-Calve, which he fitted up for hospital purposes. Dr. Heermann, as owner of the property, then rented it to the Government for the sum of \$140 a month and installed the sick under his care in the buildings upon it. The property was used as a hospital for some years the exact number not known but as late as 1822 it was spoken of as the naval hospital. It appears that in addition to the hospital property, Dr. Heermann purchased certain sundry negroes, who he hired out to the Government as hospital servants. Apparently he was quite entrepreneur, for he seemed to have engaged in a certain traffic in pharmaceuticals, and to have sold to the Government the medicines and surgical supplies used in the hospital.

Yellow fever was prevalent in the city during that time and until much later.

In 1811, Dr. Heermann being denied of the privilege of private practice, wrote to SECNAV and made a plea for an increase in his \$50 a month and two rations daily, which was his entire salary. The letter:

"Sir:

I am grateful for the honor I enjoy in superintending one of the most important naval hospitals, perhaps in the United States; but on taking a comparative view, it is truly desponding that the acquirement of a scientific profession at a vast expense and never ceasing toil is so

scantily remunerated as to place it in point of profit below the level of the most menial journeyman mechanic in this part of the country.

"The Navy will ever be indebted to you, sir, for your benevolent exertions to diffuse relief and comfort to the diseased seamen by erecting hospitals in several of the Atlantic States and the services to be rendered by the medical officers superintending hospitals cannot be, I trust, a secondary consideration. Congress, you will permit me to observe to you, has justly appreciated the importance of that office, when in enacting a law in April, 1808 for raising for a limited time an additional military force, it has therein allowed to an Army hospital surgeon \$123 per month, independently of the usual allowance for house rent, fuel and so forth. This amount, it stands confessed, is not more than the actual service and the dignity of the professional men deserve; and flattering myself that the inequality of reward in the Army and Navy cannot be traced to a preponderance of professional merit, I depend upon the guardianship of the honorable Secretary and pray that my pay or emolument may be augmented.

The comparatively trifling value of money at New Orleans is a prima facie evidence in itself that the small allowance of a Navy surgeon simply is a very inadequate compensation for the superintendent of an extensive hospital establishment in its various branches of domestic management and of medical attendance, and, if, sir, you will permit me to add, that by strict confinement to the hospital, agreeable to CAPT

Shaw's orders, I am entirely excluded from the benefits of private practice, your kindness will perhaps excuse the liberty I have taken of intruding on you with my solicitations; and I humbly beg that your disposition to favor and your authority to decide will induce you to condescend to reflect on the reasonableness of my request and to honor me with your determination on the subject.

I will not trespass on your kindness to trouble you with marked opinions, respecting the disadvantages of renting private houses for a naval hospital but having had an opportunity of late on the removal of this establishment from the Fauxbourg de la Course to the Fauxbourg Marginy, to be convinced that it is impossible to command a proper choice of local situations and of unexceptionable accommodations for a hospital, I have presumed to touch on the subject as a matter of your future consideration.

Signed

Lewis Neermann."

That letter was written in August; in November, Dr. Neermann wrote again to the SECNAV:

"Sir:

The great mortality that has prevailed in this city during the last season, would have induced me to offer you a summary report of the appearance and treatment of the malignant bilious fever of this country, had not the accidental and contemporaneous illness of the surgeons of the brig, Syren and of the Marine Barracks devolved on me at this time a pressure of additional duties. It gives me, however, much pleasure to be enabled to refer you to Dr. Evans (a Navy surgeons

mate), whose abilities render him in every respect competent to give you the most correct information on the subject.

An entire ignorance of every officer on this station of the particulars of a law that has been passed by Congress relative to hospitals and upon which I am directed to act by order of CAPT Shaw, obliges me to appeal to the department for that law as a guide for my official conduct.

Not having the honor as yet to receive your answer to a duplicate letter, in which I solicited an augmentation of pay or emolument, I beg leave to repeat my solicitation and I hope that the grounds upon which I then took the liberty of advancing it, will exonerate me from your censure on the present occasion.

Signed/

Lewis Heermann"

The great mortality referred to in the second letter related to the yellow fever epidemic which had occurred in New Orleans that year. The mortality rate is not known but many writers have referred to its seriousness.

The SECNAV either had no authority to raise the pay of Dr. Heermann or he simply preferred to ignore the request; in any event, copies of letters are extant from Dr. Heermann, in 1812, continuing his plea for additional pay. There is no evidence that he ever got it. Dr. Heermann was still in New Orleans when General Andrew Jackson successfully repelled British troops in the Battle of New Orleans in January 1815. There has been found no record of Dr. Heermann's participation, if any, during that battle but it is known that GEN. Jackson used Dr. Heermann's home as a headquarters.

Apparently Dr. Heermann received permission to engage in private practice. In any event there is evidence that he did engage in such practice particularly as a consultant. He had been educated in Europe, and was in demand to give medical advice. The fees he received from these consultation services plus the profits he made from supplying drugs and medical supplies contributed to making Dr. Heermann a rather wealthy man.

The professional and financial success of Dr. Heermann apparently excited the jealousy of Surgeon Morrell, USN, who addressed letters to the Navy Department charging Dr. Heermann with financial irregularities. The Secretary of the Navy caused an investigation of the charges to be made with the result that Dr. Heermann was exonerated. In his defense, Dr. Heermann wrote to SECNAV, a part of which is quoted:

"In exoneration of any censure, that by a distortion of these several facts might possibly attach itself to me, I beg leave to show that:

"Official representations to Mr. Hamilton, the then SECNAV, the solicitude of several commanding officers since, on this station, and the individual exertions of the Navy agent and of myself to obtain suitable houses for a hospital having alike approved abortive, my whole attention continued riveted to the subject as all-important to the service; and determined (contrary to the advice of prudent friends) to direct my own funds into that channel rather than submit to the disadvantages that opposed my notions of creditably conducting a hospital, valuable situation, which in point of locality, salubrity

and pleasantness, of internal comfort and of susceptibility of further improvement, with regard to additional accommodations, and the observance of policy could not be objected to by skepticism itself. From the delicate apprehensions of the heads of departments on this station, the hospital was not removed to this property till last April, at a moment when advantageous offers had been made need of leasing it, or of selling out at a considerable advance upon the first cost; and when the old establishment was actually no longer tenable, the landlord having uniformly resisted every importunity of completing the repairs of injuries sustained in a memorable hurricane of 1812.

I have taken the liberty to enclose for your examination drafts of the property drawn by the city surveyor; and in adverting to the description accompanying them I trust that the Honorable Secretary will do me the justice to believe, that a zealous pride to promote the welfare of my department and not a covetous interest for gain has swayed my conduct.

"Of the attendants employed by me and the hospital, are the cook, the carter and one orderly man. Owing to the extreme difficulty in this country of hiring good domestics for these offices, I have been much embarrassed. Their wages are precisely the same that others did receive who preceded them and would be greater if their services were disposed of in any other way.

"On the subject of medical supplies, I beg leave to observe that the pecuniary advantage arising from them is small; and has in some measure been considered as an additional compensation for the extraordinary and very arduous duties of the hospital surgeon on this station. There are precedents in favor of the practice; and I have never concealed from the department this or any other moneyed transaction I have ever had with it. On the ground of being an officer, my conduct toward the Government stands doubly pledged; and conscious of the dignity of my station at the head of my department in this section of the Union, I challenge the most subtle scrutiny of medical officers junior to me, to tarnish the reputation for strict integrity which I have invariably supported.

Mr. Smith, Navy agent, as he happily is within call of the Department will be able to dilate upon many of the circumstances touched upon; and relying also for support upon an impartial declaration; which I have solicited from Commodore Patterson, I fear not the shafts of malice, which self-devouring envy only can have levelled against my official standing; and against my personal respectability, daily promoted by a blameless conduct in private life, and the prosperous exercise of my profession.

Signed/

Lewis Heermann"

Commodore Patterson was the senior naval officer in command of naval forces in New Orleans and a week after the letter quoted above, from Dr. Heermann, endorsed it on 29 December 1815, ascribing Dr. Morrell's charges to be utterly misrepresentative and distorted. Commodore Patterson

endorsed Dr. Heermann's activities and stated that he, as the commandant, sanctioned the continuence of those activities.

Dr. Heermann remained on duty in New Orleans until the summer of 1823 when he came North owing to ill health. At that time, he secured a leave of absence to recover and hoped to benefit from the springs at Saratoga, N.Y. During his leave of absence, Dr. Heermann was in close association with the famous Dr. Valantine Mott, civilian surgeon, of New York.

In 1824, Dr. Heermann returned to New Orleans but was somewhat broken in health. He remained in New Orleans till the summer of 1826 when he granted an extensive leave of absence. Although he spent the winter of 1826-27 in New Orleans, in the spring he journeyed up the Mississippi to Louisville, Ky. where he spent the summer. Dr. Heermann remained in ill health although he later had duty in the Mediterranean Fleet and then spent considerable time in New Haven and New York. He also returned on at least two occasions to New Orleans, though it is presumed that his ill health prevented him from much practice of medicine. He returned permanently to New Orleans in November 1832 where he remained until his death in August 1833.

During the Civil War Surgeon Foltz who was with Farragut in the attack on and the capture of New Orleans had established a hospital prior to the attack at Pilot Town, some 50 miles South of New Orleans. This location proved to be unsuitable and after only 2 or 3 months in operation it was disestablished. Farragut's force remained in New Orleans for considerable time after its capture and it is reasonable to suggest that hospital facilities were provided to the Fleet during that time, although no documentary evidence has been found.

NEWPORT, R.I.

Navy activities in and around Newport, R.I., have existed as long as has the Nation. Evidence is scanty or nonexistent relative to medical facilities being provided ashore until the late 19th century.

A hospital, commissioned in 1890, was a building formerly used by the city of Newport as a pest house. This building was replaced by a sick quarters built at the Naval Training Station, in 1895, with \$20,000 appropriated by Congress on 2 March 1895. This building was transferred to BUMED on 29 September 1896 and on 6 February 1879 it was commissioned as a naval hospital. The hospital occupied a small reservation on the northeast corner of Coasters Island. The principal buildings consisted of a central structure of three stories containing an administrative office, kitchen, mess hall, operating room, and 4 rooms for officers patients. There were 2 wings with 12-bed wards in each wing.

A 24-bed hospital building for contagious diseases was built in 1898, and later, in 1900 and 1901, construction of 3 pavilion type wings were added to the main hospital. These additions provided a capacity of 84 beds for enlisted and 4 for officers. The Coasters Harbor Island Hospital was of flimsy construction with no basement, with poor ventilation and heating facilities. It was never satisfactory and in 1910 a tract of land on the adjacent mainland was purchased as a site for a new hospital. This tract, with an additional 5.6 acres acquired in 1941, provided the present hospital with a reservation of 31.2 acres at a total cost of \$78,566. Construction of a new hospital was started in 1910, on contract with the Noel Construction Company, at a cost of

\$279,411.00 allotted from the Naval Hospital Fund. The present Naval Hospital, Newport, was commissioned 15 April 1913. The old hospital building was used as a Hospital Corps School from 1914 to 1921.

The Naval Hospital, Newport, provides service for the Narragansett Bay area, and besides being a supply base and a naval training center, it has long been a home port for units of the Atlantic fleet. The submarine base, from nearby New London, was also served by the naval hospital. During World War II, the naval hospital had a capacity of 217 beds in permanent and 614 beds in temporary construction. The emergency capacity was rated at 1,149 beds. This capacity was exceeded when the high census load was 1,315 during 1945.

The hospital reservation fronts directly on Narragansett Bay being bordered on the south by Cypress St., on the east by Third St., and on the north by the training station Rd. The main building as originally built consisted of a three-story structure with two-story brick ward buildings extending as wings to the north and south forming a structure 380 feet in length. During World War I, several temporary wooden ward buildings were erected but removed following the war.

NORFOLK, VA.

The Naval Hospital, South Annex, Naval Operating Base, Norfolk, Va. was located a half mile east of Hampton Blvd. about $1\frac{1}{2}$ miles south of the Naval Air Station, 2 miles south of the Naval Operating Base proper and 5 miles north of the business district of Norfolk. The hospital site occupied about 59 acres of land taken over by the War Department, in 1917. This land was transferred to the Navy Department, in 1927.

The construction of this hospital was accomplished by the Virginia Engineering Company at a total cost of \$3,700,000. Construction began on 15 November 1941. The hospital originally was planned and constructed to provide 750 beds but 8 additional wards were added during World War II to raise the capacity to 1,030.

The hospital was commissioned 2 November 1942 with CAPT T. C. Anderson, MC, USN, as medical officer in command. Patients were admitted on the commissioning date and during the month of November 1942 more than 1,000 patients were received into the hospital. In the first 2 months of operation more than 2,200 patients were admitted and a total of 1,180 remained as of 1 January 1943.

In the early days of the hospital, dependents were treated as outpatients only. On 22 February 1943, a dependents unit with facilities for in-patients was opened. By June 1943, the dependents unit had handled 4,147 patients and recorded 142 births. Construction of new ward buildings continued throughout World War II.

Between the commissioning date 1942 and 30 June 1945 a total of 41,600 patients had been admitted to the hospital.

OAKLAND, CALIF.

The site of the Naval Hospital, Oakland, was acquired on 11 February 1942. The Secretary of the Navy took possession of 300 acres of the old Rancho da Santanie--occupied partly by the Oak Knoll Golf Club--from the owners, Arthur D. King, and his wife, Florence L. King, for the sum of \$127,000. For the construction of temporary emergency hospital facilities on this site, \$2,000,000 was made available from the Third Supplemental National Defense Act of 1942.

As originally planned, the hospital was to have a capacity of 500 beds. As construction progressed, the need for additional hospital beds was evident, and additional wards were constructed to provide a total capacity of 2,779 beds. The first group of ward buildings had a capacity of 564 beds, the second group accommodated 182, and the third group provided space for 292 additional beds.

The hospital was commissioned on 1 July 1942, with CAPT F. E. Porter, MC, USN, Retired, as the first medical officer in command. At that time, 6 ward buildings were ready for occupancy and by November 1942 the first 3 groups were completed.

The hospital was designated, on 29 May 1943, as a neuropsychiatric center. It was believed advisable, however, not to carry out this plan and a portion of the 300 acres was set apart and a new hospital, known as Naval Hospital, San Landro, was constructed on a plot consisting of 125 acres. This hospital was designated as the navy facility for the care of NP patients. The San Landro Naval Hospital, as a separate activity, was commissioned on 15 Aug. 1944 with CAPT F. L. McDaniel,

MC, USN, in command. It was disestablished on 1 Sept. 1946, and the buildings and grounds of that facility were transferred to the Naval Hospital, Oakland, in a caretaker status. The two married officers quarters of the San Leandro hospital were taken over for the use of the staff of the Oakland Naval Hospital.

Even though the rated capacity of the hospital was 2,779, an estimated emergency capacity of 5,454 was possible by use of double-deck-bunks. Even this number was not large enough, since the highest census of patients reached during World War II was 5,577. Many of this number were on leave or subsisting ashore so that there were sufficient beds provided for all patients.

The naval hospital is located in a valley among the hills behind the city of Oakland. A small creek runs through the valley which is sheltered on three sides by a hill. The area is usable for building purposes vary from 250 to 375 ft. above sea level. The hospital reservation lies on the east side of Mountain Blvd. at Oak Knoll Ave., about 12 miles from the East Bay Bridge. The buildings in the original hospital complex were of temporary wooden construction and most were one-story structures. The administration building, quarters for staff personnel, and certain service buildings were two stories high. The buildings stood across the floor of the valley on each side of the creek and up the slopes of the hills. Most of the ward buildings were of H-type construction; only a few single or half-H wards were erected. The hospital contained living accommodations for 5 married officers, 51 bachelor officers, 128 nurses, 658 enlisted men, 39 waves, and 12 civilian employees.

More than 140 buildings in all, constituted the hospital complex. During the period 1 July 1942 to 1 Jan. 1946 there were 123,394 admissions to the hospital. Many of these patients were admitted for a short period of time only, this hospital serving as a transfer point for patients received from the Pacific war area and remaining at this hospital temporarily until they could be transferred to other naval hospitals for further treatment and final disposition. Approximately 3,000 repatriated prisoners of war patients were admitted, processed, and in many cases retained for treatment, as indicated. Many of the POW's were transferred to other facilities or sent home on leave. Almost all were kept a minimum of 72 hours.

There were many problems arising out of the many transfers. Owing to the huge number of personnel involved and to maintain accountability for them it was necessary to provide rather strict regulations during the transfer period and transportation to other Navy or Army activities. The following comments indicate some of the problem:

"After boarding hospital trains, all patients were dressed in pajamas in order that there would be no detraining without permission of the train commander. There were 4 or 5 naval officer patients who objected to wearing pajamas. There was the alternative of complying with orders or being removed from the train. They complied."

"One draft, a part of a large draft, but on a different train enroute to New Orleans and its attendants were left without meal tickets, these having been given by the draft coordinator at the train to the wrong medical officer. This problem was solved by the Army liaison officer who issued emergency ration tickets."

"The train conductor did not return the return-trip portion of the tickets, requiring the hospital at the other end to issue transportation for the attendants. This, of course, resulted in a checkage of pay against the attendants until such time as claims could be processed, which is still hanging fire."

"The Army had hospital train departure from the Presidio, San Francisco at 0800. As this is approximately 50 miles away and loading the patient had to begin at 0700 it necessitated the patients departing from the hospital at 0500. As this is too early for civilian help to be available they were necessarily departed without breakfast."

"Train left Third and Townsend at San Francisco at 1300--this necessitated patients departing from this hospital at 1310; therefore they missing the noon meal on the date of departure."

The Naval Hospital, Oakland, as planned and constructed in World War II, was not intended as a permanent hospital. As soon as the war emergency had ended, recommendations were begun for the construction of a new and permanent facility. The patient load remained near 1,000 during the succeeding years but no progress was made on the construction of a new hospital until December 1865, when the ground was broken for a new 650-bed hospital. The new hospital was planned as a nine-story building

with 452,800 square feet of floor space. The estimated construction cost was placed at \$14,500,000. The hospital was designed by Stone, Marraccini and Patterson and Associates; Milton T. Pfleuger was the architect; the construction contract was awarded to Huber, Hunt and Nichols of Santa Clara, Calif. The new permanent hospital facility was built on the same site as the old hospital, but during the construction no interruption to patient care was encountered.

The 4 lower floors of the new hospital were designed to contain all clinical and diagnostic services and treatment facilities, serving both outpatients and inpatients. The 5 upper floors were designed to contain all inpatient nursing units.

On 29 June 1968 more than 1,000 people attended the dedication and commissioning of the new Naval Hospital, Oakland. Senator Thomas H. Kuchel delivered the dedicatory address. The new building was formally transferred to the Surgeon General, VADM Robert B. Brown, by CAPT W. E. Davidson, CEC, Commanding Officer, Naval Facilities Engineering Command, Western Division. Admiral Brown accepted the hospital and, in turn, presented a symbolic golden key to RADM E. P. Irons, MC, USN the designated first commanding officer of the new hospital.

The new hospital was not ready occupation on the dedication date, but the visitors and honored guests were taken on a guided tour of the new facility. Among the many civilian and military guests attending the ceremony were 3 former commanding officers all retired: RADM A. H. Dearing, MC, USN; RADM S. S. Cook, MC, USN; and RADM T. G. Hays, MC, USN. With the occupation of the new hospital, many of the buildings

of the older hospital were continued in use but the majority were scheduled for demolition.

Dierholtshel
30 Sept 1996

ORLANDO, FLA.

The naval hospital Orlando, Fla., was constructed to provide medical support to the new Naval Training Center, Orlando, commissioned 1 July 1968.

The training center was preceded on the site by the Army Air Force Base opened 1 Dec. 1940 to be the center of an interceptor command school. During World War II, the base was extensively expanded and provided a training center for the Air Corps of the Army. In 1965, the Air Force, which service had occupied the base since its construction in 1940, decided to move to another base and vacate the premises. For some time the Navy Department had been inspecting possible sites for the establishment of an additional training center and Orlando was selected.

When the site was occupied by the Navy as a training center, the Medical Department simultaneously occupied the former Air Force medical spaces. This site has a total of 147 acres including 2 lagoons, part of a 9-hole golf course and other recreation facilities. The existing hospital compound covered about 34 acres containing some 64 buildings. The hospital buildings were of World War II construction for the most part and considered to be merely temporary until appropriations and approval for the construction of a permanent hospital could be obtained. The Air Force hospital served a population of approximately 60,000 persons including active duty, retired, dependents and others eligible for medical attention. Outpatient visits exceeded 12,000 per month. The Air Force Hospital had an authorization for 135 operating beds. With expansion capability, the bed capacity could be raised to about 700.

The hospital was commissioned formally at the same time as the Navy Training Center, that is, 1 July 1948. CAPT W. G. Lawson, MC, USN, was the first commanding officer. Utilities, including water supply were obtained from the city of Orlando.

PARRIS ISLAND, S.C.

The Naval Hospital, Parris Island, occupied a site rich in history. The first known landing of white men in the vicinity was that of Jean Ribaut who landed there in April 1562 with a party of French Huguenots. Parris Island is one of 25 islands in Beaufort County, known as the Sea Islands. These islands are located in Port Royal Sound which extends 25 to 30 miles inland from the sea. Port Royal Sound was named Royal Port by Jean Ribaut. Port Royal harbor is considered to be one of the best on the Atlantic Coast, South of Cape Hatteras. Parris Island is located about midway between Charleston, S.C. and Savannah, Ga. It is a low-lying area covered with semi tropical foliage, and is about 10 square miles in area.

On 12 August 1698, the lord proprietors of South Carolina conveyed the property to Major Robert Daniell, in which a grant to the extent of 48,000 acres was included. In 1701, Daniell conveyed the title of the island to one Alexander Parris who for many years was Public Treasurer of South Carolina and otherwise conspicuous in the early history of the Province; from Alexander Parris, the present name Parris Island was derived.

The Navy undoubtedly used the Port Royal Sound in the early part of the 19th century. On 7 Nov. 1861, a Federal vessels anchored off Port Royal and bombarded and captured Ports Beauregard and Walker on Bay Point and Hilton Head. The Navy and Marine Corps took possession and held these forts and surrounding territory throughout the remainder of the Civil War.

Old documents referred to the medical facilities available at Port Royal during the Civil War. It was not, however, until the early 1890's that much Navy activity took place. Prior to 1891, the only permanent Navy facilities on Parris Island consisted of a coaling station; there was one steam launch with a crew of 6 men stationed there. The first Navy medical officer mentioned in connection with this station was Assistant Surgeon L. L. Young. There is little information available relative to this period, but it appears that the coaling station grew in size and services so that medical facilities were provided until the Spanish American War, when it became necessary to establish a hospital. It is believed that Dr. Allan Stuart was its first medical officer in charge.

In the early summer of 1898, two portable buildings of wood and canvas were received and erected, each accommodating about 12 cots. A central frame structure containing a hall, dispensary and an office for the medical officer were also built. In the late summer of the same year, the two portable wards representing the first efforts at a hospital were destroyed by a severe tornado. Shortly after the tornado had destroyed the hospital there was an outbreak of food poisoning caused by the consumption of spoiled meat. Since medical facilities and personnel were limited, the Marine Detachment was detailed to assist with the care of the sick. The destroyed buildings and tents were replaced by other temporary frame structures but these temporary structures were continued in use until 1917.

On 4 March 1899, the first General Register of patients was started. For the remainder of that year 16 patients were admitted with 1 death during the year.

In 1916, the Naval Station was transferred to the Marine Corps for use as a recruit depot. It became necessary to enlarge the hospital facilities to care for the large number of men and officers who would be trained or stationed at Parris Island and which by this time had been increased to 1,600 men and 7 officers. Plans for an addition to the hospital facilities were begun in January 1917; the contract was let in March to the Newport Engineering and Construction Company for \$16,168. Construction commenced immediately on one building containing two wards of 22 beds each, a quiet room, diet kitchen, laboratory, specialists room, and a small brig. The hospital was completed about 1 July 1917 and promptly occupied. Before this building was ready for occupancy war had been declared against Germany making additional medical facilities necessary. There were approximately 7,000 men under training at this time. The hospital was expanded by use of tents. Five additional buildings were constructed by the W. C. Hodlow Company and completed in February 1918. By February 1918, the personnel and station had increased to more than 12,000 and preparations were made for the training of as many as 20,000 at one time. Plans for additional hospital facilities were drawn up but not put into effect since the Armistice was signed in November. Between 1919 and 1921, additional buildings were provided and two Marine Corps buildings were transferred to the Medical Department for quarters.

In 1923, the hospital complex consisted of 27 buildings on 15 acres of land. One of the buildings was brick and the remaining 26 structures were wood. Repairs and some new construction were continued during the 1920's. In the 1930's, Veterans Administration patients were admitted and some expansion was necessary. The hospital continued to provide support to the recruit depot throughout the 1930's.

In the summer of 1940, plans were completed for the construction of 3 H-type ward buildings with a bed capacity of 60 each. Quarters, storehouses, and other ancillary buildings were constructed. On 11 August 1940, a hurricane hit the island and destroyed 3 old buildings and damaged several of the others.

On 7 December 1941, there were approximately 40 medical and dental officers, 8 nurses and 169 hospital corpsmen attached to the hospital; the patient census was 202. The patient load increased, with the necessary expansion during World War II; and in 1942 the total number of patients was admitted 7,629. This number was slightly exceeded in 1943. The maximum census was reached in August 1945 when 796 patients were on board.

It was plainly evident that this hospital was inadequate to care for the constantly expanding Marine Corps training facilities and even before the end of the war proposals were recommended for the construction of a permanent hospital outside the Marine Corps Base. In 1948, with the completion and commissioning of the new hospital at Beaufort, on the mainland, the Naval Hospital, Parris Island, was deactivated.

PATUXENT RIVER, MD.

The Naval Hospital Patuxent River, Maryland was commissioned 1 July 1948. Medical facilities had existed at this air station since its establishment during World War II, but not until 1948 was it given naval hospital status. When it became a naval hospital the first commanding officer was CAPT R. H. Bradshaw, MC, USN.

PEARL HARBOR, HAWAII

The Naval Hospital, Pearl Harbor, was completed on 1 May 1915. Construction of a hospital at Pearl Harbor to provide medical support to the Navy Yard and other navy activities at Pearl Harbor were first recommended by Surgeon General Rixey in 1909. The first patient was admitted to the hospital Pearl Harbor on 23 July 1917.

Prior to the provision of a naval hospital at Pearl Harbor medical attention was first provided to the Fleet from the tug Iroquois, which served the island from 1890 to 1901. In the early 1900's, a small dispensary was built at the old navy station in Honolulu but equipment was meager and all patients requiring extended care were sent to the Queen's Hospital, in Honolulu, for treatment.

The site of the naval hospital consisted of 42.8 acres on the waterfront in the western section of the Navy Yard facing the channel and Waipio Peninsula. The original hospital was laid out on a roadway heading approximately northwest/southeast, with the buildings facing the northeast. Although the construction of the hospital was completed in 1915, it was not put into commission until 2 years later. Originally it had a bed capacity of 74.

There was one large ward on the second floor of the main building and a small urology ward on the second floor of the main operating building. The quiet rooms at the end of the second floor were used for officers. The first floor contained the officers' messhall and the kitchen and living quarters for civilian employees. Hospital corpsmen lived in tents nearby and their toilet facilities were in the basement

of the main building. In the basement were the dispensary, laboratory, bakery, storeroom, power plant, and mortuary. During the early years of the hospital, the patient census was usually about 25. Occasionally, small epidemics of mumps or other mild contagious diseases, such as epidemic influenza, appeared.

On 12 December 1918, the USS Nanking with 200 French and American sailors bound for Siberia, made port and transferred 14 patients with influenza to the hospital.

The work of clearing the hospital reservation was a huge one during the early administration. The entire area was overgrown with vegetation including algaroba, klu, and lantana. Garbage was fed to hogs kept on the reservation and other refuse was burned in an incinerator. The water supply was limited and it was frequently necessary to limit the amount of watering accomplished. Occasionally the water pressure was too low to flush the toilets. It was not until 1924 that additional reservoirs were erected in the Navy Yard and a pipeline was constructed from deep wells in the hills to insure an ample water supply.

Following an inspection trip by SECNAV, in 1919, construction of additional hospital facilities was started in December of that year and completed 11 April 1921. With the completion of these buildings, the first floor of the old ward building was cleared of offices and was remodeled into a large ward. The power plant in the basement was moved to make room for a bag room and additional storage space. The new power plant and shop, as well as maintenance shops, were provided away from the main hospital structure. The old dispensary and laboratory, in the basement of the original building, were fitted up as an Eye, Ear, Nose and Throat Department.

Soon after the completion of these units, the construction of the storehouse, Hospital Corps quarters, contagious-disease building and several quarters for duty officers were recommended. The Commandant of the Navy Yard, Admiral Simpson, did not agree with this recommendation. In April 1923, he questioned the advisability of future development or expansion of the hospital. He stated that,

"The hospital occupied one of the most desirable sites of this station for many important military purposes."

Although not mentioned in development plans, its waterfront is ideal for berthing of capital or other ships and is located very conveniently to the industrial sections of the yard. It is common of outside observers that the natural direction for expansion of the industrial or supply sections of the station is in the direction of the hospital.

"If the supply sections of the base reach large proportions it is not believed that the waterfront available in the vicinity of the site contemplated will be adequate or satisfactory for meeting the berthing requirements. This is a lee shore with adequate sea room for maneuvering in the offening.

"In other words, it is quite possible that the waterfront of the present hospital site will have to be used for berthing whether the hospital is ultimately moved or not."

"The present hospital occupies a site, which in case of any enemy bombardment from sea, would undoubtedly be the target. It is located close to the drydocks, existing and proposed, immediately under the high radio towers and in the direct line with an adjoining the oil tank farm."

Despite the adverse endorsement on the recommendations, the development of the hospital continued. When the Fleet visited Pearl Harbor, in 1925, a great increase of activity in the hospital resulted but the staff had been increased in anticipation of the visit and the increase was easily accommodated. The tents of the isolation camp were filled with patients suffering from mumps; as many as 50 were under treatment at one time. Construction was authorized for a laboratory, mortuary, animal house, nurses quarters, junior officer's quarters, pharmacist's quarters, and 2 hutments. These were completed 25 May 1929, and put into commission shortly thereafter. The laboratory was large and equipped to care for the needs of a hospital expanded to several times the present size. The nurses quarters, of concrete construction, comfortably housed 26 nurses. With the completion of this new construction tents were taken down and stowed away. Hospital corpsmen were housed in one hutment and the galley force in another. A contagious disease building had been recommended, as well as Hospital Corps quarters and a garage, but none was approved. A wharf was built soon after the hospital was commissioned and was extensively rebuilt in 1930.

In 1930, in cooperation with the Agriculture Department of the University of Hawaii, considerable attention was paid in developing the grounds which were cleared and beautified gradually, even to the extent of being over-developed. Many trees were removed at this time and transplanted with considerable improvement in the landscaping of the hospital complex.

During the first 8 months of 1943, the hospital was administered as one of a dual command under the medical officer in command, Aiea Heights. But on 18 August 1943, separate commands were reestablished. In October 1945, ground was broken and work was begun on a tract of land on Monaloa Ridge at which site the Naval Hospital, Pearl Harbor, was to be relocated. On 21 March 1944, all equipment, staff personnel and patients were transferred to this new location. The facility here consisted of 235 buildings of the quonset and other temporary-type buildings; they were arranged in a 3,000-bed hospital plan. However, owing to rapid changes under war conditions it became necessary soon after opening to rearrange all facilities for the care of a reduced number of patients and staff. During August 1944, 100 Japanese/Korean prisoners of war was admitted to the hospital all of whom were emaciated, dehydrated, and extremely dirty.

On 19 March 1945, the bed capacity of the hospital was established at 2,500. On 21 July 1945, the hospital was awarded the Navy Unit Citation for its outstanding performance in caring for casualties admitted or treated subsequent to the Japanese attack on Pearl Harbor on 7 December 1941. On 26 September 1945, the bed capacity was reduced to 1,000 beds. On 21 October 1945, an order was received from the Commandant of the 14th Naval District directing the disestablishment of the hospital on 1 November 1945. Receipt of patients was discontinued. On 2 November 1945, all patients had been disposed of either by transfer to other facilities or by evacuation to the mainland for further treatment. The total number of patients submitted during the war emergency was 19,266.

It is possible no U.S. naval hospital in history has ever been subjected to as great a medical emergency as confronted the Naval Hospital, Pearl Harbor, on 7 December 1941. Certainly this hospital when confronted with that emergency reacted in the highest traditions of the Naval Service.

The medical officer in command made a formal report of the air raid of 7 December to the Commandant of the 14th Naval District some 2 weeks following the attack. In this report, CAPT Reynolds Hayden, the Commanding Officer, reported that the hospital staff was first aware of an enemy air raid about 0745 in the morning, when a flight of about 20 Japanese planes passed immediately over and to the channel side of the hospital buildings. In the view of observers, it appeared that the planes had either come up the channel or had flown low over Hickam Field. The planes did not molest the hospital in any way but went on toward Ford Island and the ships upstream. The planes were flying at a high speed and at an elevation of about 75 to 150 feet above ground level. They were not immediately identified as enemy planes and the action that followed was so fast there was no time to report by telephone before the planes were firing on their objectives.

The Commanding Officer immediately assembled members of the hospital staff then aboard. Staff members who did not live on the hospital grounds were notified by telephone and arrived rapidly, some within 20 minutes. The entire staff was on duty by 0915. Stations for air attack were manned by 0800; patients in locked wards and the brig were released; ambulances and fire fighting apparatus were scattered to

avoid possible destruction. Battle dressing stations were manned in the operating suite and all ward dressing rooms by 0815.

About 10 minutes after the attack began, a Japanese plane, ablaze, was seen flying directly toward the front of the main building. It swerved to the left, struck the corner of the laboratory building and crashed between the laboratory and CPO quarters bringing up against one of these buildings. The quarters were ignited by the blazing plane but fires were extinguished by hospital fire fighters. The quarters, a small frame building, were practically destroyed. The two Japanese aviators in the plane were dead. Their bodies were recovered from the plane, identification attempted, and papers found on the bodies were given to the intelligence service. The bodies were placed in the hospital morgue.

At about 0825, Edwin S. Sereside, PhM3, stationed near the waterfront sighted what he thought was a periscope of a submarine. He immediately reported this to the Officer of the Day who, in turn, informed the yard duty officer by telephone.

Casualties began to flow into the hospital in a heavy stream by about 0900 and were distributed to various dressing stations, this distribution being effected by the Commanding and the Executive Officers. As medical officers arrived they were assigned to various dressing stations. Four operating teams were organized and worked in the main operating suite. A receiving station for minor injuries was established in the nurses quarters, which had been vacated but not destroyed, in connection with work on drydock Number 4. Many dead were received with the wounded. The basements of the laboratory and the nurses old quarters

were converted into a temporary morgue. Ambulatory patients were evacuated from the hospital wards and transferred to old frame buildings and five hospital tents in the rear of the hospital, the regular wards being thus left available for battle casualties.

Only one casualty was sustained among members of the hospital staff; this was Arthur W. Russett, PhM1. He was killed by machine-gun fire in the Navy Yard, while returning to the hospital from liberty. The hospital was not fired upon directly by the Japanese but the air above the hospital was full of missiles--chiefly shell fragments.

Casualties were brought to the hospital in all types of vehicles; ambulances, military and civilian trucks, personal automobiles and delivery wagons. It was most gratifying to note the manner in which civilians spontaneously cooperated in bringing casualties to the hospital promptly even though under fire. The civilians had no thought of possible injury to themselves or to their automobiles. A total of 452 battle casualties were admitted to the hospital during the day of December 7th. Many others, of whom it was impossible to keep a record, were brought to the hospital suffering from minor injuries. These casualties were treated and immediately returned to duty. Following the air raid, 93 battle casualties were transferred to this hospital from temporary first-aid stations established during the raid and from several plantation hospitals in the vicinity of Pearl Harbor; a total of 545 battle casualties were admitted. The census of patients as of midnight 7 December was 960.

A total of 313 dead were brought to the hospital on the first day. Almost the entire basement of the laboratory and the old quarters of nurses and the ground in the immediate vicinity of these buildings were utilized as a temporary morgue. A guard was placed over the bodies and

at about 1100, 7 December, a working party in charge of the hospital pathologist, LTJG J. S. Shaver, MC, USN commenced work identifying the dead and preparing the bodies for burial. Dr. Shaver was assisted by LT J. E. Justice, DC, USN, who helped in identification by examination of the teeth. ENS C. S. Fay, MC, USN also assisted in the work. On 9 December, the small dock and immediately adjacent land at the Aiea landing was designated by the District Medical Officer as a temporary morgue where bodies would be taken when recovered. The work of identification and preparation of remains for burial was continued there by LT Shaver's work detail. The work of this party was most unpleasant and difficult and they are to be commended. ENS Fay gave practically his entire time for several days to this duty and was of inestimable value.

The great importance of proper and prompt identification of remains was fully appreciated and great care was exercised to accomplish this task correctly. As might be expected identification of remains was extremely slow, difficult and, at times, impossible. Few records were available; a number of enlisted men had clothing marked with several names. The bodies were badly charred or mutilated; at times, only portions of bodies were brought in; fingerprints were often unobtainable because of absence of fingers or because they were so badly mutilated.

The absence of metal identification tags, such as later worn during World War II, seriously hampered identification procedures and was responsible for inability to identify many of the dead. In order to keep accurate records the following procedure was adopted:

- 1) Each body was tagged, identified or unidentified, with a number, serially;
- 2) Rough Form N, Navy Report of Death, was made out for each body giving all available data including fingerprints and names, if obtainable;
- 3) The number of each form N with the same number given to the corresponding body was made;
- 4) If the body was wrapped in canvas, the canvas bundle was tagged with the number on the body;
- 5) Each body was placed in a plain wooden casket; and
- 6) Each casket was marked with the number given the body buried therein.

These bodies were buried in trenches but the burial place of each casket was indicated by a marker driven deeply into the ground and showing the number above the ground. The Department of Public Works also prepared an accurate plan of the burial area by survey showing the exact location of each casket and the number thereon. With the exception of identified officers, all caskets were plain wood and purchased locally. Bodies of officers were placed in standard Navy caskets in order that they might later be dinterred and shipped home, if desired.

The burial of remains was commenced on 8 December in Oahu cemetery and necessary additional land was obtained for the Navy plot. On 9 December it became evident that sufficient land was not available in this cemetery for this purpose. By direction of the Commandant, a site for a new cemetery was selected. This site was approved by the District

Medical Officer and remaining burials were made in the new cemetery in the Red Hill area Halawa. It is suggested that this new cemetery be named the Halawa National Cemetery.

LTJG Thomas J. Odlin, Catholic hospital chaplain, was assisted by two civilian priests from Honolulu all day and night following the attack. On the afternoon of the first day, Chaplain J. P. Forsander arrived and remained at the hospital until 10 December. Individual needs and last rites and prayers were cared for and administered by these four men to all patients who died in the hospital. These chaplains also officiated, in turn, at funeral services at both Oahu and Halawa cemeteries. A brief military funeral service was held each afternoon at the cemetery over the bodies of those buried that day; a Marine guard firing a salute and a marine bugler blowing taps.

A number of medical officers from ships destroyed in the harbor reported at the hospital for duty from time to time during the morning of 7 December, and were of great assistance. LCDR in this instance and all other instances LCDR T. M. Downes, MC, USNR, and LT Joseph Nunes, MC, USNR, were sent to this hospital from Mobile Base Hospital No. 2 to assist us. These physicians formed one of the surgical teams and did valuable work. LCDR Herman Gross, MC, USN, who was a convalescent patient in the hospital following a major operation volunteered his assistance and worked hard for 3 days until he became exhausted.

The entire hospital staff--doctors, nurses, dentists and hospital corpsmen--worked hard all day and night of 7 December and the succeeding days. The hospital civilian force did the same with the galley force

doing exceptionally well. At the midday meal on 7 December there were 4,500 persons served. The excess personnel was composed of Army, Navy, and Marine Corps defense units in the vicinity of the hospital, plus a considerable number of men from lost ships, who were working wherever they appeared to be needed and got their meals at the nearest available place. In addition to the nurses on duty at the hospital, there were a number of wives of enlisted men living in the Navy housing area, outside the Navy Yard, who came to the hospital at various times and volunteered for work. Their names were not taken and their identity is unknown, but they were of valuable assistance. The local Red Cross chapter also supplied additional trained nurses who did excellent work.

A number of officers and men convalescent patients in the hospital urgently requested that they be returned to duty immediately in order that they might rejoin their own commands. This was authorized in nearly all instances, as the men concerned were practically fit for duty. They made their way by the best means possible to their parent organizations.

Approximately 350 patients were admitted with body burns. These burns showed the following characteristics: 1) All burns appeared to be flash burns: 2) The body surface that was covered by clothing was not burned. Those wearing undershirts had no burns on the chest or abdomen. Those wearing undershirts and shorts had only face, arm and leg burns. Those fully clothed suffered only face and hand burns: 3) There were practically no third degree burns.

The hospital staff is of the unanimous opinion that the desirability of all personnel wearing undershirts and long trousers should be emphasized.

A number of patients who died in the hospital as a result of extensive body burns probably would not have died had they been wearing more clothing when injured in battle.

Service and health records, pay accounts and other documents of casualties were not only missing but frequently unobtainable. Accurate lists of casualties, both living and dead, were not readily obtainable. All bodies recovered have been cleared through this hospital in order that this work might be centralized. LT C. P. Hines, MC, USN, and the staff of the personnel and record office, have worked sometimes all night in preparing these reports and deserve great credit.

On the day of the attack and for several days thereafter, there were many calls from various units for immediate issue of medical supplies. These calls were promptly filled by CPhM A. S. Robertson who displayed remarked executive ability while so doing. No special individual is cited for commendation as the entire hospital staff performed its duties in an exemplary manner. There was no regard for enemy fire and duties were accomplished in accord with the best traditions of the Navy. The entire hospital organization operated smoothly and efficiently, all patients being cared for promptly. Fortuitously, Mobile Hospital No. 2, under construction on Aiea Heights, was able to improvise facilities quickly and assist in the care of casualties from the air raid. In addition, USS Solace was in the harbor and provided hospital care to the limit of its capacity.

Prior to the war it had been planned to replace the Naval Hospital, Pearl Harbor, by a new facility on Aiea Heights to afford relief to the

overstrained resources of the Navy Yard hospital. Although the hospital on Aiea Heights was planned as a replacement for the Naval Hospital, Pearl Harbor, too crowded and too dangerously close to military installations, the great needs of the war required that the hospital in the Navy Yard continue in operation. It was not until 21 March 1944 that the old site was abandoned. The mobile hospital continued to operate throughout 1942. When it was decommissioned in 1943 the equipment and supplies became the property of the Naval Hospital, Aiea Heights. The buildings were utilized by Base Hospital No. 8, a temporary transportable facility commissioned 1 November 1943.

During the entire course of the war, there were at all times at least 3 separate and distinct hospital units in the Pearl Harbor area:

From the outbreak of war until 12 Nov. 1942: Naval Hospital, Pearl Harbor; Mobile Hospital No. 2; and USS Solace.

From 12 November 1942 until 1 November 1943: Naval Hospital, Pearl Harbor; Mobile Hospital No. 2; and Naval Hospital Aiea Heights.

From 1 November 1943 until 21 March 1944: Naval Hospital, Pearl Harbor; Naval Hospital, Aiea Heights; and Base Hospital No. 8.

From 21 March 1944 until 30 November 1945: Naval Hospital, Monalea, Naval Hospital, Aiea Heights, and Base Hospital No. 8.

It was routine practice to evacuate to the mainland patients who would require more than 60 days hospitalization. Such patients were evacuated after shell fragments were removed, fractures reduced

or other emergency procedures taken and the patient had sufficient strength to permit ocean travel. During the latter part of the war a high proportion of casualties brought from the Western Pacific to Pearl Harbor came by air. Between 1 March and 20 October 1945, 7,139 patients were transported in this manner. Patient evacuation by ship to the mainland, during this same period, totaled more than 8,500.

PENSACOLA, FLA.

This naval hospital is among several which claims an early date of establishment. Only the Master Record Keeper knows for sure which one is entitled to claim of first, but documents are available to prove that the Naval Hospital, Pensacola, Fla., was in operation as early as 1826. Many existing documents, however, refer to naval hospitals in other locations than Pensacola prior to 1826.

Establishment of a naval hospital at Pensacola was authorized in the 1811 Act which also provided for the Naval Hospital Fund. Although authorized, a permanent hospital at Pensacola was not completed until 1834. In the meantime, beginning in 1826, a new two-story house in the live oak woods north of Barrancas close to the Bayou Grande was rented for \$30.00 per month, from 1826 until the first hospital in the old hospital compound was completed. This temporary hospital was established at Pensacola with Surgeon Isaac Hulse as the senior medical officer.

The first hospital was described as being outside the wall, a description used to distinguish between the hospital compound and its exterior. The wall, referred to, described a 12-foot high brick wall which enclosed the entire hospital compound of approximately 15 acres. It was erected in the 1830's at a cost of \$11,921.25. The purpose of its construction was to keep mosquitoes out of the hospital compound. This is the legend associated with the construction of the wall, but since the knowledge that mosquitoes were carriers of malaria and yellow fever was not proved until the late 1800's it appears more likely that the wall was constructed merely as protection against the presence of unauthorized persons on Navy property.

The site upon which the hospital was built was located about three quarters of a mile from the Navy Yard. It was selected because with some degree of isolation from the yard it was believed to be desirable as protection from frequently recurring yellow fever epidemics. The prevailing breezes which blew across this 30-foot bluff was considered to be healthful. There is some evidence that the Spanish had maintained a hospital on this same location earlier.

The hospital was first occupied in 1834 but not entirely completed until December 1835. When the schooner, Grampus, made port in August 1835 with many patients suffering from yellow fever it was necessary to construct huts on the beach in front of the hospital for their care.

Early in the 19th century, the Pensacola Navy Yard was quite busy. European Nations, including the English, French and Dutch were active in the West Indies and the Pensacola Navy Yard was an ideal base for the United States Fleet which patrolled these same waters. Prior to the Civil War, the yard was considered to be one of the best equipped in the United States. The continued principal problem, relative to the naval hospital, was the need to contend with recurring epidemics of yellow fever.

The Navy Yard, Pensacola, was captured by the rebels early in the Civil War. The naval hospital was out of commission from late 1861 until early 1864 when the area was recaptured. The South had made little, if any, use of the Navy Yard and most of the buildings, including the hospital, were in a state of repair or unusable. One

of the few buildings, late in the yard, however, was a two-story structure, which with some repairs, was made into a naval hospital, in 1864. This structure provided inadequate accommodations for about 100 patients. Nonetheless, this building continued to serve as a naval hospital, inadequate though it was, until 1875, when money and materials became available to reconstruct a new hospital roughly on the site of the old one.

This new structure consisted of a single pavilion, housing five wards in a row, each ward accommodating five patients. A house for the surgeon, with two rooms for sick officers and a few out buildings completed the hospital complex. Whenever an increase in patient requirements occurred, tents were erected until the emergency was over. There was little change until 1893, with no new buildings; the wrecks of several of the burned, brick ones remained with no repairs having been completed. By this time, the Navy had shifted to steel ships and steam. Pensacola was not well situated for either iron or fuel and the yard had been falling into disuse so that the demands on the hospital were limited. In 1898, coincident with the Spanish American War, there was a start in reviving the yard but the war was over so quickly that little was accomplished. A severe hurricane, in 1906, nearly finished ruining the yard and attempts at reconstruction were brought to a virtual standstill by a severe yellow fever epidemic in 1908. It was considered in 1911, that the navy yard at Pensacola was unnecessary and the whole base including the hospital was placed in inactive status.

It was the development of steel and steamships that had helped to bring obsolescence to the old navy yard; another progressive development brought Pensacola back to life. This circumstance was the increased attention to the new art of flying machines. The ideal year-round flying weather and the landlocked bay for amphibious flying appealed to a Navy board inspecting potential sites for an air station and influenced this board to select Pensacola as a new naval aeronautics station.

This air station was established 20 January 1914; medical support was provided by a station dispensary, but in 1917, after the United States entered World War I, a naval hospital was reestablished. The dilapidated old buildings of the former hospital were torn down and a one-story frame structure was erected. This structure, with alterations and additions, continued in use until 1941. On 15 February 1941 the present hospital was completed and dedicated. Continued growth of the aeronautics station, renamed naval air station, required continued expansion. In the past 50 years swamps around Pensacola have been drained and thousands of acres of land have been reclaimed. With the draining of swamps the almost complete disappearance of yellow fever and malaria from the area has been noted with a concomitant reduction in the number of poisonous snakes and alligators. It is said that shooting alligators was a popular sport in 1917, but none are in evidence now.

Two towns--Woolsey and Warrington--were demolished to make room for the expanding naval air station, the former, in 1921, and the latter, in 1931. The present naval hospital was proposed and begun in 1937. The new naval hospital--considered to be the fifth Naval Hospital, Pensacola--is of brick construction, and was completed 15 February 1941. All the

buildings of the old hospital, however, were not torn down and many with repairs and alterations were used first as a dependents hospital and outpatient clinic as well as quarters for enlisted personnel.

The naval hospital, built in the 1830's, was on a reservation of about 15 acres. The hospital itself was about 600 yards from the bay and 42 feet above sea level.

Surgeon Issac Hulse was first assigned duty at Pensacola in November 1826 and apparently spent most of his shore duty at that station, until his death in 1856. In a letter dated 11 July 1828 setting forth the need for a hospital he wrote:

"I have been under the necessity of hiring for an indefinite time a hospital--the sick, 11 in number, are now in it. It is a two-story house, situated in the shade of the live oaks at Barrancas. I could not obtain it less than \$30.00 per month, which is cheaper than to make the old hospital tenable."

The old hospital, referred to, probably was the one maintained by the Spanish prior to the United States' purchase of Florida. The original hospital reservation of 15 acres within the brick wall were increased to 40½ acres in 1938, by the transfer of land to the hospital that was north and west of the compound. The principal structures of the present hospital are of reinforced concrete and brick. The main hospital building is a three-story and basement administration building facing Pensacola Bay to the South. Two-story ward buildings were erected at the east and west ends of the administration building. The front structure is connected by two corridors with the subsistence

building in the rear, enclosing a patio or court. CAPT H. L. Kelley, MC, USN, was the first medical officer in command of the present hospital. During World War II, the hospital capacity was greatly increased by the construction of a row of four H-type single-story wooden buildings and one pavilion ward at the northwest corner of the reservation. These wards were connected with the main hospital by a long ramp. At the end of World War II, two of the wards were converted to facilities for hospitalization of dependents.

The primary mission of the Naval Hospital, Pensacola, is to give medical support to the personnel of the Naval Air Station. Several training schools for naval aviation as well as the School of Aviation Medicine are located here.

The highest census of patients, reached during World War II, was 1,073. The buildings of the hospital now accommodate 347 beds in permanent construction and 394 in temporary structures. An emergency bed capacity of more than 1,000 is possible.

The naval station activities in the Pensacola area had expanded to such an extent that, by 1963, extensive reorganization of medical support facilities were made. On 22 April 1963 the Naval Aviation Medical Center Staff Unit was established as a component command of the Naval Aviation Medical Center, providing administrative support to the commanding officer of the Naval Aviation Medical Center and members of his staff. The mission of the center is to administer the naval hospital, the school of aviation medicine and the center staff unit by direction, coordination and professional supervision of clinical and hospitalization services, aviation medicine training, aviation medical

research, and evaluation of aeromedical equipment. In October 1963, responsibility for the administration of all Hospital Corps quarters, for both staff and students of the center, was assigned to the Commanding Officer, U.S. Naval Hospital.

Pensacola Bay was first discovered by the Spanish explorer Diego Miruelo, in 1516, 3 years after Ponce de Leon made the first landing on the continent of North America near the present site of St. Augustine, Fla. Miruelo may well have been on a slave-raiding mission and his discovery could have been accidental. The second serious voyage of exploration to this area came shortly after this, under Panfile De Narvaez, who landed on Santa Rosa Island in 1527. Some of his ships were the first built on this continent, near where St. Marks is now located on Apalachee Bay. Between explorations ashore, westward from Pensacola and losses at sea, only five of this expedition escaped fevers and hostile Indians, one of whom, Cabeza De Vaca, after 7 or 8 years of servitude with the Indians, finally reached the Spanish settlements in Mexico.

Stimulated by De Vaca's tales, Hernando De Soto set out from Spain with a large band of followers in 10 ships and explored much of the peninsula of Florida from Tampa Bay northward, finally reaching the Mississippi where De Soto died of fever. Many of his followers, however, had been slain by the Indians who were very hostile, a hostility readily understood when it is remembered that the Spainards had raided Florida for slaves soon after Ponce de Leon first landed.

In 1559, an expedition with 1,500 soldiers were outfitted at Vera Cruz under Don Tristan De Luna. On 14 August 1559, this force reached Pensacola Bay where the first town in the territory, later to become the United States, was established on the site where Barrancas

Post is now located. A hurricane, which struck shortly after the landing, destroyed most of the ships and fever and losses to the Indians cut down the numbers of the force to the point that added with dissension in the ranks led to the abandonment of the colony in 1561. In the 17th and first half of the 18th centuries additional attempts were made by the Spanish to establish settlements in Pensacola Bay but none survived for any length of time. Between 1754 and 1819, Florida and Pensacola Bay was alternately in the hands of the Spanish, the French and the British, again back to the Spanish from whom the United States purchased the territory in 1819. Formal transfer was not made until 1821.

The Navy first occupied the area formally in 1826 when a naval station was set up on Fort Barrancas. Almost continuously since then, the Navy and Navy medical support has been in evidence in the Pensacola area.

In 1874, a serious yellow fever epidemic occurred at the navy yard. The SECNAV formed a medical board, consisting of Medical Directors Joseph Wilson, and Henry O. Mayo and Surgeon J. R. Tryon to investigate the circumstances of the epidemic. These gentlemen reported their findings 1 January 1875:

Their collective opinion was that the yellow fever had been introduced to Pensacola by two Spanish vessels, lately out of Havana, Cuba. It was estimated that 354 died as a result of yellow fever in Pensacola, although the exact number of deaths was not obtainable. This number

of deaths was not obtainable. This number of deaths was quite high, since the city of Pensacola at that time had a population of only slightly more than 3,000. There were 26 deaths reported among Navy personnel and their families from some 200 total population of Navy personnel.

In connection with the investigation, the board reported that the hospital building in the Navy Yard was not fit for any imaginable use. It was a rough, decayed, wooden shed; it had a good roof that might serve as a hay barn if moved to the country. The board recommended its removal by burning or otherwise. It was their opinion that it had no useful purpose nor could any of the materials from which it was constructed be salvaged.

PHILADELPHIA, PA.

Among the claimants to the title of oldest naval hospital, are those chauvinists in Philadelphia. There is evidence that medical attention by medical officers of the Navy, and their predecessors, was provided in Philadelphia as early as 1771. At that time--and probably before--sort sort of medical facilities existed on Province Island, a body of land in the middle of the Delaware River. A pest house existed and was used for hospital purposes in this location between 1771 and 1799. It is documented that Dr. Benjamin Rush served for some time, either in charge or as a consultant in medical matters, while this facility existed in the 1775 to 1777 period.

Preceding the present naval hospital, commissioned in 1935, in addition to the medical facilities on Province Island, there is evidence that the Pennsylvania Hospital was utilized on occasion, for the treatment of Navy personnel between 1777 and 1811; one or more buildings in the Southwark Navy Yard was used from 1801 to 1813; a new building in the Southwark Navy Yard was then used from 1813 to 1826; in 1826, Navy medical facilities in Philadelphia were provided in the old Pemberton Mansion on the grounds of the present Naval Home, which facility was used until the completion of the Naval Asylum in 1834; from 1834 until 1868 the south wing of the Naval Asylum, now Naval Home, was used as a naval hospital.

With the completion of the naval hospital on the grounds of the present Naval Home at Gray's Ferry Road, in 1868, this facility

was the Naval Hospital, Philadelphia, until 1917, when a temporary hospital was constructed to provide medical support, during World War I. This new structure was necessary owing to the lack of expansion room in the Naval Hospital, Gray's Ferry Road. The temporary hospital, located within the area of the present Philadelphia Navy Yard, remained in constant use until 1935 when the present hospital was commissioned.

Little is known relative to the facilities on Province Island. Since extant references to it began in 1771, there is little question but that it probably was a facility used by the British for a provision of medical attention to personnel of public and private vessels. Since Philadelphia was occupied by the British during part of the war, this facility was not available continuously to elements of the infant American Navy.

Prior to 1826, when the medical facilities were provided "out in the country" in the Pemberton mansion, the Pennsylvania Hospital was frequently used by Navy medical officers. The Pennsylvania hospital was located only a few hundred yards from the old Southwark Navy Yard; many of the medical officers of the Navy had received their education, at least in part, at the Pennsylvania Hospital (the forerunner of the University of Pennsylvania Medical School). Sick quarters of sorts, were available in this same period at the old navy yard, after 1801, although it was not until 1811 that the better quarters were provided. Dr. Benjamin Rush was a wheel in colonial medicine and he maintained close professional relationships with several of Navy surgeons, until his death in 1813. These relationships included those with Drs. Barton, Harris and Cutbush,

prominent in early Navy medicine. Dr. Rush was not actively on duty, apparently, in either the Army or the Navy but his advice and counsel were sought by medical officers in both services. This advice and encouragement he gave unstintingly.

The Act of 1811, authorizing the construction or establishment of naval hospitals by utilization of the Naval Hospital Fund, specified Philadelphia as one location for these hospital facilities. It further specified that among the authorized hospitals one was to be denominated as a naval asylum. As a result, the Navy medical facility in Philadelphia remained, in title, the Naval Asylum until construction of the naval hospital, in 1868.

Navy medical facilities in Philadelphia, exclusive of the Pennsylvania Hospital and the probable use of several buildings and/or private residences at or near the old Navy Yard, were in five different locations. All were in a radius of less than 2 miles, and located in what is now known as South Philadelphia.

The present hospital, commissioned 12 April 1935, was the first naval hospital to be built in a high-rise, multiple-story design. The present hospital is located about a half mile North of the Naval Shipyard, facing southward onto Pattison Avenue. It is bounded on the West by 20th Street, on the East by Broad Street and on the North by Hartranft Street, occupying about 48 acres of flat, filled-in land.

The land occupied by the present hospital is man made, once the site of the Sesqui-Centennial Exposition, held in 1926. Portions of the land were once so low lying that they were virtually swamp lands. The

original hospital site, in 1935, occupied only about 15 acres.

During World War II, land was acquired to the East and the West, now occupied by an extensive complex of wards, quarters and service buildings.

The original purchase of land for the present hospital was approved by Congress, 12 February 1931, following considerable wrangling as to the site to be approved and the expenditure of money for construction. Ground breaking for the hospital was accomplished in 1931, and the corner stone of the hospital was laid on 27 October 1933 by the Surgeon General, then RADM P. S. Rossiter, MC, USN. The first commanding officer of the new hospital was CAPT J. B. Manchester, MC, USN, who presided at the commissioning ceremonies on 12 April 1935. The hospital was designed as a 650-bed hospital, but by expansion in semi-permanent, concrete-block, ward buildings, a capacity of more than 1,400 is possible.

By use of double-deck bunks and by arrangement with Swathmore College during World War II, the capacity of the hospital frequently exceeded 3,000 patients. Since World War II, the average capacity has more often than not, been above 1,000 patients.

Extensive debate centered on a proposal to construct a high-rise hospital building. Prior to 1930, the Navy had never constructed a hospital higher than 4 stories. Even this height had not been attempted for other than administration buildings. Emphasis had always been on spreading out. Detachment rather than concentration was considered to be the only satisfactory method of providing isolation. Earlier, in common with general trends, some of these detached buildings, housing patients with contagious or infectious diseases, most often were referred to as pest houses. The school advocating dispersion of hospital facilities and

wards vertically eventually won out and the Naval Hospital, Philadelphia, became the first "skyscraper" type naval hospital. The dedication ceremonies were attended by a notable group of high ranking naval officers and civilians. Included among those who were guests were RADM W. C. Watts, Commandant Fourth Naval District; the Hon. J. Hampton Moore, Mayor of Philadelphia; Dr. J. Evans Scheehle, Pennsylvania Secretary of Welfare; RADM N. M. Smith, Chief of Bureau Yards and Docks; RADM P. S. Rossiter, Surgeon General of the Navy; Mr. Harry J. Crosson, Regional Manager, Veterans Administration; COL Vincent A. Carroll, American Legion National Committeeman; BGEN Frank T. Hines, Administrator, Veterans Administration; the Hon. Joseph A. Guffy, U.S. Senator from Pennsylvania; the Hon. George P. Darrow, Member of Congress from the Seventh Pennsylvania District; and CAPT John D. Manchester, Medical Officer in Command.

Many other special guests beside staff members and their families, included RADM C. E. Riggs, MC, USN, former Surgeon General; CAPT E. R. Gayler, CEC, USN, officer-in-charge of construction; CAPT P. W. Foote, Chief of Staff, 11th Naval District; Mr. Walter T. Karcher and Mr. Livingston Smith, Architects; and Mr. John McShain, building contractor.

No matter who they were the high ranking military and civilian officials who attended the commissioning ceremonies had to be much impressed by the result of their respective planning and efforts. The building itself, the equipment in it and the arrangements embodied

the latest principals of scientific medical achievement. Every clinical service, every ward, every office, every examining room and every space had been equipped with the best possible equipment obtainable.

A historian who was present at the commissioning and likewise present at the observance of the 20th anniversary of the hospital in 1955, asked the participants in that 20th anniversary celebration:

"Examine, if you will, these features of the new hospital: the nurses' station was located in the center of each ward with medicine cabinets built into the bulkhead behind her desk; a flashing light overhead, instead of the disturbing clamor of a bell indicating that someone was attempting telephone communication with the ward; the heads, showers, utility rooms and linen closets were located nearby; each patient could select his choice of three radio programs merely by plugging in the earphones with which his bed was equipped; each bed was furnished with a new innerspring mattress and most beds were of the type permitting raising and lowering of head or foot; each ward had its own solarium; so many were the comforts and conveniences, in fact, that it could almost be considered a pleasure to be a patient."

All wards, clinical spaces and offices were housed in a single structure. Even the nurses' and Hospital Corps quarters were connected to the hospital with covered ramps. The only truly detached buildings were the quarters for the Commanding Officer, the Executive Officer, the Chief of Surgery and the Chief of Medicine and the garage.

Congress, in 1931, had authorized the purchase of suitable land at a cost not to exceed \$125,000.00. The city had offered land, considered

by the Navy to be unsuitable owing to its proximity to railroad lines and the Navy Yard industrial complex; accordingly, this original land was purchased from private owners.

Philadelphia, since the early colonial period has been identified with American medical progress. It was in Philadelphia that the first hospital in America (Pennsylvania Hospital) was established in 1751. In the early 19th century, Philadelphia was among the most important of U.S. cities and seaports and Navy medicine developed with the fleet. Many of the medical men who developed nautical medicine were from Pennsylvania. In fact, between 1800 and 1860 some 240 physicians were enrolled in the Navy as medical officers; of these 59, or 24½%, were from Pennsylvania. Of the first eight chiefs of the Bureau of Medicine and Surgery, five were from Pennsylvania.

It was largely through the concerted efforts of the Navy Medical Department and the Veterans Administration that this hospital was approved for construction when it was. Since shortly following World War I, it had been customary for Veterans Administration patients to be cared for in many Navy and Army hospitals. One of the selling points in the construction of this new facility was the fact that patient costs in Veterans Administration hospitals averaged more than \$4.00 per day, whereas the Navy could provide equivalent or better treatment at a cost only slightly more than half of this sum. Throughout the 1920's, the Naval Hospital, League Island, predecessor of the Naval Hospital, Philadelphia, had maintained an average patient census of VA beneficiaries, ranging from 100 to as many as 350. No adequate VA hospital existed in the Philadelphia area.

In addition to inpatient care of VA patients, the Navy, by arrangement with the Veterans Administration, conducted compensation medical evaluations. This medical service, by agreement, provided for from 25 to 35 Navy medical personnel, including doctors, dentists, hospital corpsmen and nurses in excess of the authorized allowance of the naval hospital. This work continued throughout the late 1920's and 1930's.

This 13-story, steel framework structure, faced with brick, consisted of a central tower building upon which was superimposed two additional, one-story towers at the east and west ends, respectively. The first three floors of the central building had three-story ward structures arranged at right angles and radiating to the southward or front of the hospital on each side of the main structure. In addition, at right angles is a similar four-story structure radiating to the west and to the east, respectively.

In the original design, the basement level contained a commissary, maintenance shops, storerooms, brig, and a locked ward, as well as the outpatient department. On the first floor, were four wards, the administrative offices including records and accounting office, Red Cross, ships service, pay office, chiefs of services offices, and an auditorium. The auditorium was a combination theatre gymnasium and seating as many as 200 and also designed for playing basketball.

The second floor, in addition to ward spaces, contained the EENT clinic, the Veterans Administration regional office and examining room, the medical library, the dental clinic spaces, the laboratory and physical therapy spaces. The third floor contained X-ray spaces, examining rooms and the surgical operating suite. Over the years since 1935, relatively

few of the originally-designed spaces have remained in use for the same purposes for which they were used originally with the exception of several of the wards. The floors above the third floor from four through ten were used for surgical patients, genito-urinary wards and contagious wards, up to the tenth floor. The eleventh and twelfth floors were designated as spaces for sick officers. The thirteenth floor, not so numbered or designated, contained spaces for elevator operating machinery and storage.

It is believed this hospital was the first the Navy had built, in which space specifically was provided for and was designated as, a Hospital Corps quarters. Prior to this time, with some later-provided exceptions, many hospitals had no adequate living spaces for hospital corpsmen, who were obliged to sleep in any available unused spaces. Attics, unused wards, spaces over utility buildings, and basements, prior to this time, had been utilized as Hospital Corps quarters.

The hospital facilities provided for in Philadelphia, prior to 1826, consisted of 2 successively known buildings referred to as the old building and the new building respectively, at the Southwark Navy Yard; these facilities, in present concepts, hardly deserve to be recognized as naval hospitals. Wretched as they were they provided some accommodations for the sick and represented the aggressive efforts of early Navy medical officers toward the provision of these accommodations. Generally, until the 1830's accommodations for the care of the sick officers and men of the Navy and Marine Corps were miserable, indeed. Some examination of these accommodations is necessary since several medical officers, notably Thomas Harris, apparently accomplished much

with the meager facilities available. Surgeon Harris--later to become the Chief of BUMED--not only provided medical attention at the Navy Yard, Philadelphia, but also directed a school for new medical officers prior to their first sea duty. The expense of the school was defrayed partially by a fund made available by the Secretary of the Navy, in 1823. This fund, amounting to \$400, was continued each year by seven successive Secretaries of the Navy until 1843. At that time a new SECNAV--A. P. Upshur--soon after taking office made an audit of his books and came to the conclusion that the expenditure, though a worthy and laudible one, had no justification under the law. Mr. Upshur, therefore decided, that he must stop making this fund available. He made the decision with regret as he so informed Dr. Harris in a letter, but in the absence of legal authority he felt obligated to discontinue the allowance.

SECNAV expressed confidence that Dr. Harris had administered the fund faithfully and indeed he had. Dr. Harris kept his annual expenditures not only within the \$400 allotted while providing lectures in surgical procedures and Navy orientation to an average of ten new doctors each year, but, in addition, he arranged for these new medical officers to have attendance privileges at the medical school at the University of Pennsylvania during their indoctrination period, at no cost either to the students or to the government.

The Pemberton mansion located on the site of the newly-acquired space for the Naval Asylum, served as a hospital for at least 7 years after its acquisition for use as a Navy medical facility in the Philadelphia area. At the time of purchase, the Pemberton mansion,

a part of the Pemberton estate, was then on the outskirts of the city of Philadelphia. It was located near the Schuylkill River fronting on Gray's Ferry Avenue. This avenue was one of the main access roads from Philadelphia to the farmlands, southwest of Philadelphia. The naval asylum building, partially completed by 1833, was intended as a final home for old and decrepid seamen. This concept was borrowed from the British who two centuries earlier had provided such a home (Greenwich) near London. Part of this structure was utilized as a naval hospital--but known as the naval asylum--from the middle 1830's until the new hospital was built in the same site in 1868.

Curiously, the naval asylum was also used in the late 1830's and until the establishment of the Naval Academy at Annapolis, as a school for young midshipmen. Technically the origin of the Naval Academy was in the Naval Asylum, Philadelphia. This building, furnished about 1838, is still standing and is used now for the purpose for which it was originally constructed. The hospital, finished in 1868, located to the rear of the original building and is still in use as a part of the naval home.

During World War I, it became necessary to provide additional space for the expansion needed to cope with the medical requirements of that war. Construction was begun and partially completed in 1917 and occupied as a new naval hospital. This facility was designated officially as the Naval Hospital League Island, Pennsylvania.

The original Navy Yard, Philadelphia, authorized in 1801, was located only a few squares from Independence Hall which was in the

center of colonial Philadelphia. In 1870, the yard was moved from the original location to its present location at the extreme southern end of Philadelphia. It is within the present Navy Yard complex that the naval hospital was built in 1917. The World War I hospital was constructed as temporary wooden buildings, most two stories high, radiating from hallways which ran the length of the hospital. Since they were constructed hastily and intended only for war-time use they were considered to be and certainly were veritable firetraps. Fortunately, no major fires occurred between 1917 and the occupation of the new hospital in 1935. The Naval Hospital, League Island, had a permanent capacity of about 750 beds but it was necessary during the war to expand by use of additional temporary buildings which were torn down after the war. As many as 1,500 patients were accommodated during the World War I period.

In 1883, Surgeon Edward Shippen wrote and published in the Pennsylvania Magazine an account of the origin of the naval asylum at Philadelphia. It is this account that provides most of the present knowledge in relation to the 19th century Navy medicine in the Philadelphia area.

It appears that the Pemberton plantation was a favorite area for the British commanders who occupied Philadelphia during the Revolutionary War. There is some evidence that not only the commanders occupied the Pemberton mansion but also that troops were encamped in the spaces nearby.

The costs of construction of the naval asylum were paid, for the most part, from the Naval Hospital Fund. With few exceptions this was standard practice throughout the 19th Century.

Since hospitals were simultaneously under construction at Chelsea, Portsmouth, Pensacola, and Brooklyn during this same period, many years elapsed before any one of them was completed, owing to depletion of funds during construction. The asylum building, though by no means complete internally, was occupied toward the close of 1833. Indeed, the building was not finally completed until 1842. At that time according to the report of Mr. Strickland, the architect, the asylum building cost \$195,600.00. Adding the cost of the land, \$17,000.00 the total was \$212,600.00. Of this amount about four-ninths was appropriated by Congress the rest came from the Naval Hospital Fund.

It appears that many Navy officers of that time took a proprietary right or interest in the naval asylum. An unknown defender of a contrary opinion in a well-digested report in speaking of the Asylum and its cost, said:

"It is well for this to be remembered by those Navy officers who are in the habit of asserting that this building does not belong to the Government, but to them, they having paid for it by contributions to the Naval Hospital Fund, forget that, if any such absurd claim is set up, it extends to the seamen and marines of the Naval Service as well. The strange ideas such naval officers have, on the subject of this institution, show how little they understand either the law or the fact. Now, had every dollar of the whole expense been obtained from the Naval Hospital Fund, instead of four-ninths of the cost only, the institution could no more be said to belong to the officers of the Navy, or jointly to the marines and seamen, than a service of plate worth say \$500 presented for any commemorative purpose to an individual, can be

considered as the property of the 500 or 1,000 persons who may have subscribed one dollar, if the first number, or half a dollar, if the second, toward purchasing it for the purpose mentioned. The Naval Hospital Fund is a fund of the Government, held, controlled, and dispersed by its officers, rising in great part by a lawful exaction, not a voluntary subscription, of \$2.40 a year from every individual in the Naval Service. Certain prospective benefits under the circumstances of disability and sickness are guaranteed by this exaction law to men and officers, nothing more. This assessed annual contribution of \$2.40 has this one provision: no further franchise pertains to it--and the legal quid pro quo pledge has this extent only to provide temporary relief and maintenance to sick and disabled seamen in hospitals or other proper institutions. This is the phrasology of the law of 1798, and no other law in existence ever conferred any other privilege; even that law and that diction only relate to seamen of the Merchant Service. But the second and third sections of the law of 1799 empower the first, the assessment of 20¢ monthly in the Navy; the second guarantees the same prerogative (already quoted above) enjoyed by merchant seamen to naval officers, seamen and marines but it conveys no other right."

The Naval Asylum faces nearly east and is constructed of a grayish white marble with a granite basement. It is 380 feet in length, consisting of a center with a high broad flight of marble steps and imposing abutments and a marble colonnade and pediment in the bastard

classic style which was all the fashion at the period of its erection. The architects of banks, colleges, churches and even private residences all went to Greece and Rome for their architectural inspiration. This fashion was fastened upon the country a great number of solid and costly buildings utterly unsuited to our climate as well as being unsightly from the very lack of fitness--so was described the building by Dr. Shippen, in 1883.

Dr. Shippen continues: The wings of the building are symmetrical and terminate in pavilions, or transverse buildings at each end. These wings are supplied with broad covered verandas on each of the two main floors which verandas are admirably adapted to their purpose and are, of course, out of keeping with the classic style of the central structure. There is a fine attic over the old building which as, is in every part most substantially and thoroughly built. The marble staircases of the interior are particularly noticable both from their ingenious construction and economy of space.

All the ceilings of both basement and first floor are vaulted in solid masonry; on the main floor is a remarkably fine domed apartment used as a muster room and chapel. The most faulty part of the structure is the basement which is somewhat low and damp with an insufficiently-drained subcellar. That part of the building has always been found unhealthy, although much less so now than in the former days.

Each beneficiary was furnished with a small room beside which there were reading and smoking rooms in the pavilions and handsome quarters for a number of officers and employees. Originally, a burial ground

was provided on the north side of the property, but the bodies buried there were later exhumed and transferred to Mount Moriah Cemetery, outside the city in West Philadelphia.

Dr. Shippen reported that the first pensioner or "beneficiary" received into the Asylum, after its opening in 1833, appears to have been one Daniel Kleiss and the second was William Williams. Dr. Shippen stated that these two men were not very creditable specimens of the defenders of our country if their record while inmates in the hospital was to be taken as the standard.* These men had been living as pensioners in the old house--that is, the Pemberton house--where they were treated merely as convalescent patients. Upon occupation of the new building they were transferred and two others joined them, making four in all. The pensioners or beneficiaries were then first distinguished from hospital patients and were placed under the charge of LT Cooper who lived at the house.

At the same time the transfer or beneficiaries was made the sick in the Pemberton house, numbering 15, were also quartered in the new building. The resident assistant surgeon, Dr. Barrington, occupied two rooms at the north end of the building which were later converted to a smoking room and library. Previous to 1841, the second floor south and the rooms in the southern pavilion had been finished and occupied as a hospital, being shut off from the rest of the building

* Dr. Shippen apparently had reference to a problem that has continued throughout the existence of the Naval Home: some beneficiaries have been notable in their fondness for alcohol and their appetites have been readily appeased in the several nearby saloons.

by latticed doors. Two large rooms on the main floor immediately south of the chapel were assigned to the Medical Examining Board as permanent quarters. This portion of the building continued to be used in this way until the new hospital building was erected at the close of the Civil War. During that war the part of the building regularly assigned to the hospital was found insufficient and the sick and wounded were treated and quartered in other parts of the building.

When the Asylum was first occupied, Commodore Barron was in command of the Philadelphia station and had general charge of the Asylum. Dr. Shippen suggests that Commodore Barron seldom went near the Asylum. The pensioners, hospital patients, and hired men and women all messed together; and there was a hospital steward who furnished the generalmess in the same way and from the same funds as at other hospitals. No direct appropriation for the support of the beneficiaries, whose numbers by 1842 had increased to 42, was made until 1 July 1858 when considerably more than 100 beneficiaries were on board. Up to that time, the whole expense of maintenance had been defrayed from the Hospital Fund. In 1858, it was found that the support of these beneficiaries was too heavily a burden on the Naval Hospital Fund and \$26,392 was made available by Congress in a separate appropriation bill, a practice that has continued ever since.

The grounds about the Naval Asylum were at the time of first occupation full of trees--mostly fruit trees--remaining from those planted at different times when it was a country seat. In the winter of 1836-37, a very cold one, wood was very scarce and dear, and it was with fuel obtained from these trees that the Asylum was warmed, as well as all the cooking done. Commodore Barron had all the trees of every description cut down and converted into firewood. This act, which was much deprecated at the time, as it gave the grounds a more ragged and deserted appearance was in the end productive of good for it led to the planting of the noble trees now adorning the place. These trees were described in 1883 as being as fine as any known in the city squares and were planted by Commodore Biddle soon after he assumed charge as the first governor of the Asylum in the autumn of 1838.

At this time and long after there was a great prejudice existing against the locality on account of the prevalence of malaria. With the disappearance of ponds and brick-yards in the vicinity and a complete building up of a whole neighborhood the place was made more healthy.

Apparently in the early days of the existence of the Asylum there were a number of complaints against the manner in which the asylum was managed by LT Cooper. Some of these complaints reached SECNAV, Mr. Paulding, inducing him to believe that the superintendent of the asylum was totally unfit for his position. The Secretary proposed that some officer of higher rank should take charge, who

with the title of governor, might well give dignity to the station and sustain no diminution of his own. It is difficult to see how the dignity of the office might be enhanced by the title "governor" rather than that of "superintendent," or "commandant," but in any event, with the appointment of Commodore Biddle the title of governor has been used ever since in the Naval Asylum and its successor, the Naval Home.

During and after World War II, the Naval Hospital, Philadelphia, was designated especially as a center for amputees, for the blind and for the hard of hearing as well as a neuropsychiatric center for the East Coast.

The Naval Hospital, League Island, was ready for occupancy on 1 October 1917 after work had commenced in the same year. The first commanding officer of this facility was CAPT Arthur W. Dunbar, MC, USN; the original site, lock 49, Philadelphia Navy Yard, between Porter and Rowan Avenues and Third and Fourth Streets, had the disadvantage of being in unattractive and dusty surroundings, but it had the advantage of easy accessibility for emergency calls and short ambulance trips. The site was on low level, sandy soil about two or three feet above the water level of the Delaware River. The surface water drained off rapidly and with the filling in of a few low spots and placing of top soil and surface drains, adequate drainage was possible.

The original hospital consisted of 16 one-story pavilions facing to the south. Additional stories were added later. The buildings were of light pinewood construction supported on concrete pillars. Utilities were provided by the city utility services. Buildings were heated by

steam, from a plant common to the Navy Yard enlisted men's barracks and the hospital, through overhead high pressure lines. Each ward had a maximum capacity of 40 beds. In all, there were more than 35 buildings in the hospital complex.

The present Naval Hospital, Philadelphia, is located about three miles from Center City. At present (1971) transportation to mid city is possible by a bus line which services the hospital. Under construction and due for completion in 1973, is a subway line which will have an entrance some 200 yards from the main entrance of the hospital. Nearby, only 300 or 400 yards distant is the John F. Kennedy Memorial Stadium, formerly the Philadelphia Stadium, at which location the annual Army-Navy football game is played. The Philadelphia baseball football teams play in a new stadium built across Broad Street from the eastern entrance of the hospital reservation. Nearby also, is the indoor arena, the so-called Spectrum, where professional basketball and hockey is played. In addition to easy access to midtown Philadelphia, access roads to the Walt Whitman Bridge, across the Delaware, and the new Delaware Expressway are nearby. Within a mile of the naval hospital is the world's largest food distribution center.

Immediately after the passage of the Act of 1811, establishing the Naval Hospital Fund, measures were taken by Navy medical officers to provide suitable buildings for hospital purposes. Lack of funds prohibited the immediate erection of suitable accommodations, but efforts were made nonetheless. A building which had been used for hospital purposes in the old Navy Yard was very small and entirely

inadequate for the purpose. It was represented in 1813, "as a wretched hovel destitute of every necessary comfort for sick persons and calculated to hold 8 patients."* At that time, there were 24 patients in the hospital. The thought of each was simply to gather strength enough to desert. This state of affairs demanded immediate correction and a frame building was erected by order of the Navy Department in that year. It was regarded at the time to be for temporary use only, but it was not until 26 May 1826 that better quarters were provided. These new quarters were in the Pemberton mansion on the old Abbott lot in what was then West Philadelphia.

This lot of 23 acres was situated on the left bank of the Schuylkill River and was obtained at a cost of \$17,000,000. It was a part of the Pemberton estate which had been 150 acres and had a long and interesting history. The Pemberton's had bought their plantation from the Penns, in 1735 and built a large, square, brick house and several brick out houses on it; the Pembertons beautified it and lived outside the city in good old colonial style. Surgeon Thomas Harris, who had managed the makeshift hospital in the Navy Yard, was the first medical officer in charge of the new quarters in the newly acquired Pemberton estate.

The new building was called an Asylum in accordance with the Act establishing authority for it. It was not until 1 July 1889 that the official designation became Naval Home.

* Barton, W.P.C.:

The grounds, comprised of the 23 acres, is in a great park surrounded by high brick walls approximately trapezoidal in shape. The longer of the nearly parallel sides was formed by Gray's Ferry Road and the shorter to the west and near the river by Sutherland Avenue. The longer side was approximately 1,226 feet in length and the shorter side approximately 583 feet long. The Naval Asylum building fronts toward the southeast about 223 feet from Gray's Ferry Road. The building is 380 feet long composed of a central structure with a pavilion on each side entering into the formation of the front and ending in a transverse building. A basement, two stories and an attic, broad verandas on the two floors of the wings, broad stone steps with a marble colonnade for the central structure, fine marble stairways in the interior and vaulted masonry ceilings and a domed chapel, give a general idea of this building.

When this description was written by Dr. Gatewood in 1893, there were more than 100 beneficiaries on board; each had a small room, three good meals a day and a pound and a half of tobacco and a dollar each month. All laundry work was accomplished without any expense to the beneficiary and every reasonable convenience was supplied. Twenty years' service or serious disability in the line of duty was a prerequisite for admission. On entering all pensions had to be allotted to the Hospital Fund. Before building the Navy Yard hospital at League Island, the home was as much a hospital as an asylum. For hospital purposes, the second floor of the south pavilion, the rooms in its transverse building and the attic were used.

It was in this home that classrooms for a Naval Academy were provided; it was under its first governor--Commodore Biddle--that a class of midshipmen was formed and professors were employed to instruct them. The students were those preparing for examination and the class was renewed year after year until the founding of the Naval Academy at Annapolis, in 1845. The Naval Hospital, constructed and occupied in 1868, is in the same enclosure as is the Naval Asylum, located to the rear of that structure. It is, with the exception of the stone basement, a brick building. It is 320 feet long, faces the southeast and consists of a basement, two stories and attic with a mansard roof. It was designed by John McArthur, architect, and constructed by the Dobbins Brothers of Philadelphia. The total cost, before commissioning in July 1868, was \$172,500.

The Naval Hospital, Gray's Ferry Road, was described by Gatewood, in 1893, as consisting of a central structure and two wings all entering their full length into the formation of the front; the wings or pavilions were over 100 feet long ending in transverse buildings and containing the wards, the central structure being the administration portion. The wings, denominated northeast and southwest, respectively, were originally alike, but in 1886, the former was divided into rooms for beneficiaries from the home. The southwest wing remained as it was originally designed; on each floor was a long ward 81' x 24', and in the transverse portion a smaller ward, 21' x 20', with a nurses' room and in its rear and across the short corridor water closets. Floors are all soft pine, painted, and the walls are painted plaster. The full height of the ceilings is 15 ft. There are 14 windows in the large ward placed symmetrically on

the opposite sides. Twenty beds are in one ward and five in the other. These are the usual pattern, each supplies with a hair mattress on a woven wire base. The hospital was designed for a bed capacity of 100, but could be increased to 150 by using wards under the mansard roof.

The hospital building--originally was lighted by gas and abundantly supplied with good water from the city. As water pressure was insufficient, tanks were installed under the roof which kept water pressure at an adequate level. Steam for heating purposes was supplied from the boiler house in the rear where also was located the laundry. The sewer system was described as not all together satisfactory as it is too closely connected with that of the city, and a large sewer running through the hospital grounds had an objectional manhole not far from the buildings.

To the north of the home is the residence of the governor; and to the south is the residence for the senior medical officer of the hospital. There was a garden south of the hospital and various outbuildings but no separate place for contagious diseases. The dead were once buried in the ground but the governor now owns a place in one of the city cemeteries. In 1893, the medical staff consisted of a medical director and two junior medical officers. The beneficiaries from the home furnished most of the patients. These beneficiaries are cared for on the lower floor with the paralytics and other helpless patients in the small ward. These old men, already near the end, furnish the large mortality though they have the advantages of an

almost model hospital. From 1 July 1868 to 31 December 1892, there were 5,346 patients treated in the hospital. Of these 648 were discharged from the Service or transferred to the Government hospital for the insane, and 392 died. The largest number of patients under treatment at one time was 54; this patient load was reached in 1872; the average number of patients was 25.

In 1887, Medical Director W. T. Hord reported that, in his opinion, the hospital there was the best planned and constructed and the worst located of any naval hospital on the Atlantic Seaboard. He reported that the rooms have high ceilings, numerous and large windows and are filled with sunlight and air. The location of the hospital is not good, part of the building being on the site of the old cemetery from which 350 bodies were removed before the foundation was dug. The hospital also was too near the Schuylkill River which is nothing less than an open sewer.

The land between the hospital and the river should have been retained by the Government since the wharfs on the river are covered with all manner of filth and there are several pools of stagnant water which give out a very offensive odor. The water supply for the hospital is obtained from the city but it is very bad so much so, indeed, that every one who regards his health has it boiled and filtered. The heating of the hospital had been much improved in the past year (1886) by covering the hot air pipes with felt. The temperature has been as low as -10°F., but there had been no difficulty in keeping the wards warm and comfortable. During the past year (1886), a third of the hospital had been taken

over by the Naval Asylum to accommodate the overflow of beneficiaries. This use of the hospital reduced the accommodations for the sick by a very large proportion. The Medical Examining Board, at this time, also occupied the three large rooms one of which was the finest in the hospital. Dr. Horn reported that only three bedrooms were available for sick officers one of which was, at the time of reporting, occupied.

The inmates of the hospital, with few exceptions, were beneficiaries a class of old men who are infirm, some totally blind, others in the last stages of heart disease, some entirely paralyzed, some infantile and some affected with aneurysm, nearly all of them suffering from some form of chronic disease so that they were unable to be of the least assistance to each other, even so much as to give each other a glass of water.

Commanding Officers U.S. Naval Hospital, League Island, PA
Commissioned 10/1/1919 Decommissioned 4/16/1935

1917-1918	Arthur W. Dunbar
1918-1919	Richmond C. Holcomb
1919-1922	Arthur W. Dunbar
1922-1924	Raymond Spear
1924-1925	Richmond C. Holcomb
1925-1928	G. Tucker Smith
1928-1931	J.B. Dennis
1931-1932	Richmond C. Holcomb
1932-1934	Harold W. Smith
1934-1935	John D. Manchester

Commanding Officers Naval Hospital Philadelphia

1935-1936	John D. Manchester
1936-1939	Frank E. Sellers
1939-1942	Henry L. Dollard
1942-1943	Richard H. Laning
1943-1945	Jesse W. Allen
1945-1946	Melville J. Aston
1946-1949	Howard H. Montgomery
1949-1951	Clyde W. Brunson
1951-1953	Gerald W. Smith
1953-1955	Courtney G. Clegg
1955-1959	Charles L. Ferguson
1959-1960	Edward T. Knowles
1960-1961	Benjamin G. Feen
1961-1964	Joseph A. Syslo
1964-1966	John S. Cowan
1966-1968	Clyde S. Stroud, Jr.
1968-1969	Harry P. Mahin
1969-1972	Loy T. Brown
1972-1974	George E. Cruft
1974-1975	Scott G. Kramer
1975-1977	Robert L. Baker
1977-1979	Richard A. Baker
1979-1982	Raymond E. Tobey
1982-1982	James W. Thrasher
1983-1984	Alice M. Martinson
1984-1986	L. Carey Hodges
1986-1989	W. M. Jackman
1989-1991	Donald F. Eversmann

Disestablished 1 Oct 1991 and redesignated Naval Medical Clinic

1991-1992	Donald F. Eversmann
1992-1994	R. Tom Sizemore III
1994-1995	Faye T. Scott

Disestablished 30 Sept 1995

PORT ROYAL, S.C.

There is on file in BUMED, a copy of a letter from the Fleet Surgeon in the steamer Philadelphia at Port Royal, S.C. dated 17 March 1864, to the Surgeon General presumable written by Surgeon William Johnston, then the fleet surgeon of the South Atlantic Blockading Squadron. This letter:

"Sir in obedience to your instructions of January 20th 1864, in reference to the establishment of a naval hospital at or near Port Royal for the benefit of the South Atlantic Squadron, I would respectfully submit the following report:

I have for the past week, assisted by Assistant Surgeon A. B. Judson of the Nantucket and Assistant Surgeon J. H. Culver of the Philadelphia, then engaged in examining the suitableness of several localities for the above purpose.

I will describe each one in detail and then report in favor of the one which offers the most advantages.

First, Bay Point is a narrow strip of land but little elevated above the high water mark. It has the sea on the southeast side and a salt marsh on the northwest. Its surface consists of hills of shifting sand which is blown about by every wind. There is no vegetable growth within three fourths of a mile of the wharf which is on the extreme southern point. Farther on are a few pine trees and low shrubs. The point is very narrow and all of the eligible space near the wharf is already occupied by fortifications, ordinance buildings and garrison quarters. A situation for a hospital might be found about a mile from

the landing but it could only be reached by a sandy road, unprotected from storm and sun. Bay Point, like all other situations near Port Royal Harbor, is exposed to the influence of extensive salt marshes. These marshes are covered by the sea at every high water. Their only vegetable production is a species of tall grass. Experience has not proved that they are unhealthy. If there is any miasma arising from them it is at once dissipated by the healthy ocean breeze. Dr. Judson reports unfavorably of the water. Bay Point is a dreary, desolate place and to the eye presents nothing pleasing or attractive and affords no facilities for exercise in the open air. To patients not confined to their beds it is of great consequence that their surroundings should be of an agreeable nature and productive of cheerfulness. A long confinement in a hospital on Bay Point would beget an intolerable ennui. It is near Station Creek and the machine shops and also near the naval anchoring ground.

Second, another eligible site for a hospital, equally near Station Creek and naval anchorage, and easier of access in this, that the buildings can be erected within a few rods of a substantial wharf, is the southern end of St. Helena Island known as Land's End. There is a track of several acres of land, formerly used for growing cotton, and elevated from 12 to 15 feet above high water mark. The soil is a firm sandy loam, susceptible of cultivation and might be used as a garden.

The high ground extends down to the water terminating in a bluff. An abundant supply of water can be obtained from wells about 12 feet in depth. Dr. Culver has analyzed this water and finds no other impurity than a trace of chloride of sodium. There are trees which afford an agreeable shade. The location from its elevation and situation affords a more pleasing prospect than Bay Point. A hospital can be erected close to the water, commanding a full view of the harbor and the operation of the fleet. It is as accessible as Bay Point and as the buildings can be erected near the wharf the expense and inconvenience of transporting patients and supplies would be much less. Like Bay Point this island has the same proximity to the salt marsh but on inquiry I find it is considered to be a healthy place.

Third, I have been to Beaufort and made inquiries of the proper authorities as to whether suitable houses might be obtained in that village for hospital purposes. All houses not reserved for the use of the Army have been sold by the tax commissioners and it is the same with all lands adjacent to the village. Even if the houses would be obtained they are in many respects unsuited for hospitals. The Army medical officers contemplate leaving them as soon as a convenient and suitable hospital can be erected. The houses are greatly out of repair from past neglect. Beaufort is 13 miles from the anchorage at Port Royal; the Navy has no regular means of communication with the place and the transportation of sick and

supplies would be extensive and troublesome. The Army has boats running daily between Hilton Head and Beaufort.

In comparing Beaufort with the places mentioned above as to its suitability for our purpose this may be said of it. It is healthy locality and well supplied with water. It is a pleasant village and in the cases of officers, has the advantages of affording some society. With many patients the outside influence would be deleterious. It has become a place of considerable trade and a resort of many unprincipled men. The most rigid discipline, with the guard that would probably be allowed, would not prevent them from obtaining intoxicating liquors. There are also many Mulatto women of loose character living there whose influence would be bad. To conclude: after examining all the available localities and suming up there respective advantages and disadvantages we have determined that it combines beauty of position, healthfulness, elevation of ground, a good supply of water, ready accessibility, shade trees, and freedom from hurtful outside influences. Its combined advantages are superior to either of the other localities. A map showing the position of St. Helene Island a sketch of the proposed site and a chart of the lot to be reserved by the tax commissioners, all prepared by assistant paymaster H. L. Waite of the Philadelphia, will accompany this report. A plan of a hospital of the requisite size and material for its outfit will be the subject for another communication. I am very respectfully,

Your obedient surgeon William Johnson Fleet Surgeon"

The very next day, Surgeon Johnson wrote another letter, a part of which is on file, as follows:

"Sir: I have the honor to forward my report upon the most favorable location for a naval hospital at Port Royal. I now forward a plan for such a hospital as is required in this department. The plan and its details were drawn up and submitted to me by Assistant Surgeon, J. H. Culver. It meets the wants of this squadron and I give it my approval and respectfully submit it to the consideration of the Bureau.

The number of patients sent to hospitals each quarter from this squadron averages about 200 and it will require a hospital containing over 100 beds to accommodate all who may be sick at any given time. The accompanying plan is for one that will hold 120 beds allowing 700 cubic ft. of air to each patient. It consists of 2 pavilions each 200 ft. long, 20 ft. wide and 15 posts. Between the pavilions is a building for a laundry, kitchen, pantry, and mess hall, 150 feet in length, other dimensions same as pavilions. (It is drawn in the plan on the scale of 18 ft. but should be 20.) It is connected with the pavilions by covered corridors. These buildings can be cheaply constructed on the proposed location. The materials are a frame of light timber put together with large nails and set up a proper distance from the ground on posts. The walls to be covered with boards standing upright and battened. The roofs first covered with rough boards then with a layer of tar paper and finally the whole covered with coal tar and gravel. This roof is perfectly tight, desirable

and being nearly white does not attract the heat. The walls to be white washed outside and inside. They should stand East and West. The windows at the ends and south side furnished with venetian blinds. The doors, sash and blinds may be sent from the north. A piazza extends the whole length of one side of each ward. The pavilions and messhall to have a ridge ventilation. These buildings will contain comfortable quarters for the medical officers, stewards, nurses, and so forth. Buildings of this kind are sufficiently durable and present a neat appearance. They can be more cheaply erected on the spot than any building constructed in the north and shipped. They are well lighted, well ventilated, comfortable in the summer season, and readily warmed in winter by the means of stoves. Each pavilion contains suitable washrooms, baths, and water closets. The furniture to be required for the use of the hospital was listed as follows:

120 iron bedsteads

60 hair mattresses

60 husk mattresses

200 hair pillows

360 sheets

240 pillow slips

100 blankets

200 counterpains

120 stools

20 armchairs

6 close stools

10 bedpans	12 office chairs
20 urinals	50 frames and netting for mosquito bars
10 medicine glasses	25 wash bowls
50 tumblers	10 large pitchers
10 feed cups	10 evaporating dishes
200 plates	4 baths
150 mugs	6 wash tubs
100 soup bowls	8 water coolers
50 cups and saucers	1 coffee mill
150 tablespoons	2 forcing pumps
150 teaspoons	25 mats
150 knives and forks	
1 range with cooking utensils	
240 towels	
12 tablecloths	
25 buckets	
25 brooms	
25 scrub brushes	
6 dust pans	
2 writing desks with bookcases	signed/ William Johnson

Dr. Johnson continued his communications on 20 March 1864 as follows:

"Sir: Your communication of the 17th instance to Commodore Rowan in reference to the smallpox now prevailing among the ships in this harbor has been referred to me. I would respectfully recommend that the Acting Assistant Surgeon, B. J. Mershey of the USS Dai Ching, who has been attending to these cases be detailed to go on board the Valparaiso and remain there having no communication with any other vessel. I would also recommend that Acting Assistant Surgeon, W. J.

Burge, of the USS Flag to be detailed to attend to the Dai Ching during the absence of Dr. Hershey. This arrangement to continue to the return of Acting Assistant Surgeon J. Bushong from the north which will be in about 10 days. No intercourse whatever should be allowed between the Valparaiso and any other vessel. I have on hand an abundant supply of vaccine virus which will be supplied to the vessels of the harbor. I am very respectfully,
fleet surgeon.

To Commander William Reynolds commanding
Naval Depot, Port Royal, S.C.

A letter, dated 11 April 1864, from the Surgeon General to Surgeon Johnston was as follows:

"Sir: I have to acknowledge the receipt of your note of the 17th ultimo and the note of the 18th ultimo. They asked various enclosures referring to the site for a naval hospital for the South Atlantic Squadron which included topographical sketches plans elevations of buildings and so forth; and before proceeding further I beg to thank you for the zeal and industry you have evinced in this important matter.

For the several reasons assigned I have approved your selection of the site at Lands End. I have addressed the Hon. Secretary of the Navy to secure the proper action of the Treasury Department that the location be reserved from the usual course of the tax commissioners while the land be occupied for naval purposes.

No direct steps toward the accomplishment of the objective should be taken until this primary measure is secured.

After your general description of the building proposed you observe "such buildings can be more cheaply erected on the spot than buildings constructed in the north and shipped here." I beg you inform me how and in what manner we should proceed to have the buildings erected on the spot? Is there any reliable person in the vicinity who would undertake the work to be conducted under your direction, by contract, stipulating cost complete and time when ready for occupancy? Or would it be necessary to purchase the material and then contract for labor? I will be obliged to you to make these inquiries and any other tending to the same end and report the result to me at your earliest convenience.

Referring to the ground plan of the hospital, I beg to ask whether the central building marked for kitchens, laundry, mess halls, and so forth may not interfere in the general ventilation of the establishment and whether some of these accommodations may not be provided in the unmarked rooms at the end of wards 3 and 4?

I shall be ready to offer any and every facility and assistance in my power as soon as the Treasury Department shall have acquiesced in my recommendation, and we have arrived at a more perfect understanding of all of the preparatory measures.

Very respectfully, etc.,

William Whelan."

On 23 May 1864, a letter to Surgeon Johnson from the Surgeon General informed the former that the basic plans submitted had been approved, that Mr. George H. Davies of East Cambridge, Mass. had been approached and had agreed to erect the hospital as recommended for \$13,758.00.

Little more is known at this time about the Naval Hospital Port Royal, but apparently it was constructed and some sort of facilities for medical care remained in that area until it was superseded by the medical facilities constructed in support of the Marine Corps Recruit Training Base, on Parris Island.

PORTSMOUTH, N.H.

The Naval Hospital, Portsmouth, N.H. occupies about 17 acres on the northeast corner of Seavey's Island in the Piscataqua River, between Portsmouth, N.H. and Kittery, Maine. The remainder of the island is occupied by the Naval Ship Yard and the Naval Disciplinary Barracks. The present naval hospital is the third established in this vicinity.

The first naval hospital was started in 1834, when a small frame building in the first navy yard which was built in 1802, was repaired and furnished for hospital purposes. This hospital could accommodate no more than 10 patients with any degree of comfort although occasionally as many as 15 were treated there at one time. In 1865, some alterations and repairs were made increasing the hospital capacity to 25 beds. The building was then more than 60 years old and the need for a new one had long been apparent.

In 1866, Seavey's Island was purchased by the Government for \$105,000, and a new navy yard was established. Congress, on 2 March 1889 and on 30 June 1890, appropriated a total of \$43,000 for a new hospital building. Construction of this building on the west shore of Seavey's Island was begun in 1890 and the hospital was officially opened on 21 December 1891 when the old frame hospital was abandoned. The new hospital was described as being a brick building 83 feet long by 54 feet wide, with three stories. It could accommodate three officers and 26 enlisted men. The hospital was adequate for all purposes until the Spanish-American War, when prisoners from Cervera's Fleet were sent to Seavey's Island pending their release and this small hospital was expanded by the construction of temporary ward buildings to provide facilities for the prisoners.

In 1900, the construction of a drydock and the erection of shops in close proximity to the hospital produced an undesirable environment and the establishment of a naval prison which along with the increased activity of the navy yard made expansion of hospital facilities necessary. The site of the present hospital is on a rocky promintory at the northeastern corner of the island about 30 to 40 feet above sea level. The main building was begun in 1912 and completed in 1913 at a contract cost of \$289,585, the cost being borne by the Naval Hospital Fund. Three small temporary pavilion-type ward buildings were built during World War I and three H-type temporary ward buildings were built in 1945. One of these buildings was built as a ward for NP patients. At the end of World War II, this building was no longer needed and it was transferred to the custody of the Naval Ship Yard for use as a recreation building for enlisted personnel.

Portsmouth, N.H. has been important as a Navy Base from the early days of the American Revolution. Care of the sick and wounded of the Naval Service has been carried out here continuously in some type of medical activity since the first Navy activity ashore. The present naval hospital is classified as a general hospital.

During the Spanish-American War, Spanish navy prisoners captured at Santiago were kept at a prison camp at Portsmouth and many of them were patients in the naval hospital.

From the time of the Civil War until about 1900, Portsmouth was also a base where naval vessels having yellow fever patients on board often were sent for quarantine. Many patients with yellow fever were treated at the Portsmouth Naval Hospital prior to 1900, even

though citizens in the vicinity formally objected to such use.

The present hospital has a capacity of 380 beds of which 131 are in permanent construction in the main building and 249 are in temporary ward buildings. The emergency bed capacity is estimated at 633. One of the 1917 ward buildings is used as a dependents unit with 19 beds and 10 bassinets.

The peak patient census was reached during World War II when 428 patients were on board.

At present there are some 22 buildings on the hospital reservation. The main building, is a brick structure of three stories with a central building and two wings; it faces southeast toward the Piscataqua River.

The Navy owns two islands close to the main coast and the city of Portsmouth, N.H.; these are called the Puddington Islands. The islands are connected by bridges to each other and to the mainland of Maine, to which State they once belonged. They were part of the discovery of Martin Pring, in 1603; they were charted by John Smith in 1614, and were included in a grant to Sir Ferdinand Gorgas in 1639.

The islands were purchased by the United States, in 1800, from William Deennett the one nearer the mainland for \$5,500.00; the other island to the south, known as Seavey's Island, was not purchased until 1866 when 26 owners sold it for a combined sum of \$105,000. The Navy Yard was established on the island bought first, soon after its purchase. There was little provision for the care of the sick other than makeshift quarters until 1834, when a small, vacant, frame building constructed in 1802, was repaired and furnished for that purpose. The hospital, in 1893, was described by Dr. Gatewood as being built on the corridor

plan there being a central hall 10 feet wide on each floor connecting the front with the rear. On each side of this corridor were placed the wards and the sick rooms. The three wards were on the second floor. Sick officers and the resident medical officer had quarters on the third floor. The first floor was given up to administration, the dining room and the kitchen.

The floors of all of the wards were of Georgia pine laid on an underflooring. The windows were constructed with double sashes being necessitated by the severe winters. The windows were provided with hinged lights. There were also three brick air shafts extending the whole length of the building and connecting with a ventilating stack while registers were near the ceilings and decks. The cold air ducts from the exterior led to the bases of the radiators. Radiators were placed at convenient points throughout the building, supplied with steam from the boiler house in the rear of the hospital. The lighting was accomplished by the use of gas made on the premises.

The water closets were located at the back of the buildings as well separated from the wards as the ground plan permitted. The water closets were supplied with overhead tanks and all modern improvements. The bathrooms nearby were well furnished. The traps to all of the fixtures had ventilating ducts which finally discharged above the roof. The sewer system was an independent one emptying into the adjacent bay.

The source of water supply in 1893, was from ponds formed by damming the overflow from springs near the center of the island. The boiler and laundry house was located about 30 feet to the rear of the hospital. The laundry was equipped with a concrete deck and wood ceiling and was supplied with the most modern machinery then available from the Troy Laundry Co. The dead house was located at the northwest boundry of

the grounds near the waterfront. The staff, in 1893, consisted of a surgeon and a passed assistant surgeon. The surgeon was also surgeon of the Navy Yard. The surgeon was provided with a residence in the Navy Yard. The total number of patients treated in 1892 was 86.

Seavey's Island contains approximately of 105 acres of uneven and hilly ground well suited for farming purposes. The surface soil was described in 1893 as being generally shallow and covering a granite sub surface. The view from the island was described as being extensive and attractive. The winters were long and severe; the summers short and mild. July and August were said to be the warmest months and the thermometer sometimes reached 85°F. February was reckoned to be the coldest month with the mercury sometimes -10° to -15°F. The mean annual temperature was 44°F. The location was described as being free from malarial influences, but rheumatism, neuralgia, and bronchial disorders were common; however, the climate seemed to be conducive to a long life although typhoid fever was not uncommon in the city, and cases of phthisis were, as a rule, of short duration.

In 1912, the 1890 structure was replaced by a new hospital constructed some 500 yards to the northeast of the previous one. The construction of a drydock and the erection of shops in close proximity to the wards, accomplished in 1900, produced an undesirable environment for the hospital and the establishment of a naval prison and increased activity of the yard made expansion of the facilities necessary.

The new hospital (i.e., the one built in 1912) occupied a rocky promintory consisting of about 9½ acres. This hospital was built by the Noel Construction Co., at a contract price of \$298,000. Many additions have been made to the original structure so that the space occupied by hospital buildings now includes more than the original 9½ acres. The original design of the hospital was identical to those naval hospitals at Chelsea, Mass., and Newport, R.I.

Rumors of closing the naval hospital had been circulated on many occasions between 1890 and the post World War II period. These rumors became quite serious in November 1949, when the McNarney Committee recommended immediate closing of the hospital. Immediate Congressional intervention, however, soon caused a change of heart in the Department of Defense and closure was not effected. In 1950, the authorized bed capacity was reduced to 100.

The Navy Yard, officially designed Portsmouth, N.H., in 1879, was formerly designated Kittery, Maine, and then, as now, was located on two islands situated on the northeast side of the Piscataqua River, nearly opposite the city of Portsmouth, N.H. The Navy Station, Kittery, Maine, was described in a report by Medical Inspector C. J. Cleaborne in the Surgeon General's Annual report of 1879:

The Piscataqua River was discovered in 1603 by Martin Pring, a Captain in the service of the Bristol Company, a Society of Merchant Adventurers who fitted out two small vessels: the Speedwell and Discoverer, for the purpose of exploring "the northern portion of Virginia." Captain Pring was followed in the summer of 1605, by Samuel D. Champlain, and

in 1614, by Captain John Smith, who is believed to have made the first chart of the coast known as New England. On 10 August 1622, the council established for the planting, ruling, ordering and governing of New England in America, granted to Sir Fernando Gorges and Captain John Mason, a merchant of London and Secretary of the Bristol Company, "all the land situated between the Rivers Merrimack and Sagedehock, extending back to the Great Lakes and rivers of Canada by the name of Laconia." This was the origin of the Company of Laconia, which in 1623, established a fishing port at the "Cape at the Islands" or "Odiores Point," near Rye, and in 1631, settled the town of Portsmouth, N.H.

In 1639, Charles I granted to Sir Fernando Gorges "a parte and portion of ye countrie of America more commonly called or known by ye name of New England," the portion of the main land and premises to forever hereafter be called and named the province or country of Maine. Also all woods, trees, lakes, rivers, and islands within the said province of Maine. The two islands which later constituted the naval station at Kittery, were included in the grant.

The natural advantages of the islands, and the fine timber in their immediate vicinity, early recommended them for ship building purposes. In 1650, surveys were made of the harbor and timber for masts were selected and marked for the use of the Crown. The first ship built here for the Royal Navy was the frigate, Falkland, of 54 guns, 637 tons, constructed by Mr. John Taylor in 1690; and the first built for the Continental Congress was the Raleigh a 32-gun frigate whose keel was laid on Langdon's or Badger's Island on 21 March 1775.

This vessel was constructed by Messrs. Hacket, Hill and Paul under the supervision of Thomas Thompson, Esq., of Portsmouth, who afterward commanded her in the action with HMS Druid. Langdon's yard was used for Navy purposes up to 1800, when SECNAV recommended the purchase of Dennett's Island as a site of the naval station.

In 1794, this island had been purchased by Samuel Sheafe of Portsmouth for the sum of \$650.00 and was sold by him to William Dennett of Kittery, in 1794, for \$1700. The island, containing 58 acres, was purchased by the United States, in 1800, for \$5,500 and work was immediately commenced by removing to it the naval stores from Badger's Island, which had previously been used for shipbuilding under the authority of the Continental Congress.

The first appropriation for the new navy yard was made 1 October 1800 when \$26,304 was voted for improvements. In 1801, a large timber shed was finished and materials from Langdon's or Badger's Island was removed and stored in it. A wet dock was built and a large quantity of live oak was placed in it. In 1803, a house was erected for a dwelling, a barracks was constructed for the Marines and a bell tower was built. An octogen fort of earth and heavy timber, with embrasures for 8 heavy guns was built on the hill and a flagstaff was erected. Little more was done until 1814, when the keel of the 74-gun ship Washington was laid and a house was built over her. From this time, the yard began to assume the appearance of the naval station and its record is of more than ordinary historic interest.

Sevey's Island contained 105 acres and was purchased by the Government, in 1866, for \$105,000. The Island, fortified by an old earth work, was generally uneven and hilly and required a great deal of filling in and

leveling to fit it for Navy purposes. It possessed a number of excellent building sites on which were located some frame houses, the residences of the civil engineer and Navy constructor. The waterfront was bold, except on the Navy Yard side, where the stream was so shallow that it could readily be filled in if necessary to make the two islands into one.

The entrance to the harbor of Portsmouth was easy but there were powerful currents especially between Seavey's Island and Newcastle. For a mile above the Navy Yard more than 5 fathoms of water made good anchorage, but owing to the rapidity of the currents and some small shoals navigation was dangerous without a pilot. The River was never frozen over and was seldom encumbered with ice; it was rarely troubled with fogs except in August and September.

The old yard, located on Dennett Island, was laid out somewhat irregularly, with ship-houses and buildings especially designed for the use of the different bureaus. They were mostly built of brick or cut stone.

In discussing the quarters for the commandant and other officers, Dr. Cleborne complained about the huge expenses of the officers for living costs. He pointed out, among other things, that wages were exorbitant, higher than on any other station but California. Cooks, he said, demanded \$4 or \$5 a week, chambermaids \$3, and bad were the best of them even at these rates. The markets were described as not very good, the best of everything going to Boston, and provisions of all kinds were high. He pointed out that officers, as usual, were charged the highest price for everything and the station had become the most

expensive on the Atlantic Coast.

The Marine Barracks, Dr. Cleborne said, were constructed without regard to hygiene rules or consultation with medical authorities and in consequence were not properly adapted for barracks purposes. The right wing was a large, three-story mansion, well lighted by gas, heated by a furnace and an open fireplace and contained inside water closets, bathrooms and other conveniences. The left wing was intended for two families but was overcrowded with three families and one unmarried officer. The barracks were inconveniently arranged and containing two kitchens, two dining rooms, a general parlor and the usual allowances of chambers but with one water closet and bathroom and was lighted like the rest of the barracks with gas made in the Yard. The sewerage was bad and the kitchen and other odors were at times very offensive. There ought to be a bathroom and water closet on each family floor and the culinary department should be located outside the house. In the rear were outbuildings, stables, hen coops and small gardens.

Dr. Cleborne was critical of the buildings used for the housing of enlisted men as being generally too small for the number of men intended for their occupation. In general, they were relatively well ventilated but the washrooms did not provide proper bathing facilities and as a result the doctor was continuously complaining about the filthiness of some of the enlisted men of the Navy and Marine Corps.

Dr. Cleborne was dissatisfied with the two-storied iron bunks used in the enlisted mens barracks. He said they ought to be done away with at once. He said a folding bunk made of round galvanized iron wire, was less likely to be infested by vermin than others, and

it would take up much less room if fastened within 6 inches of the wall and made to turn up or down so as to form seats for the men in the daytime. The mattresses used in the quarters were of common ticking filled with straw and supposed to be changed once a month. He described the straw as making a harsh and uncomfortable bed and much better and equally inexpensive substitutes could be found. The blankets issued to the men usually were of fair quality, but they were scarcely warm enough in this climate without a quilt or comfort. In the interest of health, comfort and cleanliness, he strongly recommended an additional issue of a pair of good sheets to every enlisted man.

In 1834, an old frame house at the southeast extremity of the island, adjoining the enclosure of the Marine barracks, was fitted up as a temporary hospital. It formerly was occupied by the lieutenant of the yard and was probably built about 1802. Its dimensions were 40 by 30 feet; it contained a basement kitchen which was low, damp and leaky, a small scullery, or wash house, two rooms used as quarters by the apothecary, a dispensary and two small wards. (This description was written in 1879.) There were no bathrooms or laundry and no proper conveniences for the sick. The only water closet was situated at the side of the main building next to the summer kitchen and consisted of a small vault with a wooden superstructure. Adjoining the water closet was a small frame building (formerly a storeroom) which was used for the surgeons office. In summer most of the cooking was done in the scullery but in winter the basement kitchen was used and the odor of provisions boiling and baking was at times sickening and offensive to patients. The building was lighted by gas introduced from the yard; a large

cistern in the basement kitchen furnished as an ample supply of water. Wards were heated by stoves and ventilated only by windows and doors. These were so liable to draughts from the old rickety window frames and the cracked and rotting walls that screens had to be used around the patients' beds during the winter season.

No. 1 ward, running north and south with an eastern exposure, measured 29' 2" by 15' 6" by 8' 3", equalling 3,729 cubic feet and contains 8 beds. About 450 cubic feet of air space per bed was available. The ventilation was secured by 8 windows and two doors.

Ward No. 2, running north and south with western exposure, measures 29' 2" by 23' 6" by 8' 3" providing 5,654 cubic feet. Into these two wards more than 27 patients at times were crowded thereby reducing the air space to 371 cubic feet per man, an amount nearly 9 times less than was considered necessary by modern sanitarians.

There were no accommodations provided for commissioned officers yet no more than one occasion it was found necessary to receive and treat them at this hospital. There were many objections to sending patients to Chelsea, especially acute, febrile and pulmonary cases, and it was equally improper to remove more serious injury or fractures. Proper provisions, therefore, should be made for officers and men, Dr. Cleborne said.

The objective of the hospital was to insure the recovery of the largest number of sick men to health in the shortest possible time. This was next to impossible and quarters are cursed with the evils of hospitalism. The walls of each ward in this hospital were covered with an absorbant friable plaster and several layers of wallpaper and

were thoroughly impregnated with dust and disease germs from the accumulation of 40 years. To the impurity of this pest-laden atmosphere and imperfect ventilation, he attributed the slow convalescence of patients, the asthenic type of all diseases and the tendency of pulmonary infections to run into empyema and pneumonic phthisis. This building was so utterly unfit for habitable purposes that the more it is shingled and patched the worse it became, and it would be a waste of money to make other repairs.

(In a footnote to Dr. Cleborne's report, it was stated that after 40 years of neglect the sum of \$500 is now being expended on the hospital and changes were made, as usual, without any reference to the comfort of the sick or the wishes of the medical officer. The roof had been entirely resingled, a water closet had been put into the west ward which will render that almost untenable, a wooden sewer had been laid in the yard, a dumb waiter made for the kitchen and the board walk repaired. It is only fair to say that this building, as well as the pest house and quarantine hospital, does not belong to the Bureau of Medicine and Surgery. These buildings are in the Department of Yards and Docks and are merely loaned for hospital purposes.)

In the wards, the floors have dry rotted and are unsafe. The ceilings are tumbling down, the walls sag and open and the woodwork is so infested with bed bugs as to render the sleep of patients uncomfortable. So intolerable is the latter nuisance, against which all remedies appear to be ineffectual, Dr. Cleborne said, I have transferred patients to Chelsea hospital merely for the sake of increased comforts and freedom from this nocturnal annoyance. It is a most wretched receptacle for

human beings, and it is a standing disgrace to the Navy.

Notwithstanding these evils, nearly 100 patients were annually under treatment on these wards. The number of sick treated each year at the dispensary was 2,689. This number included seamen and apprentices from the receiving ship, marines in garrison, and officers of the station but was exclusive of first dressings for yard employees and visits to officers' families and servants. Fully a third of the expenditure of medicines and medical stores were credited to the latter and the amount of prescription work involved was sufficient to occupy the greater part of the time and attention of the apothecary. One female cook was employed at the hospital and the apothecary acted as purveyor. One man was on the books as a nurse but his services principally were needed in the kitchen; he was, in reality, a scullion. The nursing of patients, consequently, devolved upon convalescents to the great detriment of the sick and financial injury to the government. Two nurses and one laborer were needed at this station, Dr. Cleborne said. The former should be for exclusive attention upon the sick and the best authorities agree that one nurse should be allowed for every 10 patients in the hospital.

There was no conveyance at the hospital for the use of the sick and wounded. The ambulance--a misnomer for yard-carriage--belonged to the Bureau of Yards and Docks, was under exclusive control of the captain of the yard and was not used for hospital purposes. As a favor it could be obtained to convey a patient to or from the railroad station, but for the transportation of provisions or the airing of convalescents, it was never used at this station.

A small post-hospital for commissioned officers and 20 enlisted men could be erected on the present site for about \$8,000, Dr. Cleborne believed. The brick building, known as the paint shop, could then be utilized as a pavilion by connecting it with a two-story structure which he recommended to be built, would provide quarters for the assistant surgeon, apothecary, nurses, and rooms for commissioned officers. The administration or executive building might be constructed of brick, galvanized iron or carbolized wood, rendered fire proof by silicate soda and chemical paint. The foundation of the rocky bed, if uneven, could be filled in with concrete and covered with a layer of sand a foot deep. On this, a vaulted rough stone or brick basement four or five feet high should be raised and upon this substructure, the deck of the building should be erected. The walls should be double with air spaces between, and be well provided with double louvre windows.

Dr. Cleborne strongly urged the construction of a new hospital with accommodations for as many as 35 or 40 patients; he submitted plans which he drew for the construction of these hospital facilities. He recommended that the heating of the new facilities be accomplished by steam pressure produced by boilers in the Navy Yard but recommended that heating should be supplemented with open stoves. These stoves he described as being double-jacketed and so arranged that a constant supply of fresh air could be brought into contact with a greatly expanded surface. His recommendations were not acted upon by the Bureau until some 12 to 15 years later, when new hospital facilities were provided.

Dr. Cleborne recommended the use of the extreme eastern end of Seavey's Island as the most excellent site for a small general hospital. He described the view as extensive and handsome, the soil as the best on the island. The ground gently sloped toward the river which would require little or no drainage construction. There was a well already on the island and an abundance of trees and shrubbery within the area which would be available as grounds for the hospital. A small establishment for four commissioned officers and 20 beds for enlisted men with abundant cubic air space for each bed could be erected, he stated, for about \$35,000 and could be constructed of brick or granite.

In connection with the medical facilities available in the Navy Yard, Dr. Cleborne recalled the year of the yellow malignant fever, which was in 1798; it will ever be memorable in the annals of New Hampshire, he said. Of 96 patients brought into the area during a 2-month period, 55 proved fatal. Since 1798, there had been no serious epidemics of that proportion, but the continued arrival of vessels from the south with yellow and bilious fevers cause alarm and call attention to the necessity for establishing a quarantine.

On 12 September 1863, USS Alabama arrived in port with yellow fever patients on board but the cases were of a light nature and no particular problems arose. Subsequently, during the Civil War and later, other Navy ships made port some of which had yellow fever on board so that the health authorities of Portsmouth became alarmed. As a consequence, in July 1869, the town of Kittery gave to the United States, for quarantine purposes, a barren reef known as Wood Island situated at the mouth of the harbor. Although several patients in the previous 5 years or so had been introduced into the area with yellow fever, no serious consequences

resulted even though the towns people were somewhat alarmed that the disease might be spread among the local population.

Dr. Cleborne suggested that the making available of Wood Island for quarantine purposes was a cheap piece of philanthropy since his research revealed the Island had been ceded to the United States by the State of Maine on 23 February 1827, reserving to the State only the right to serve civil processes. In July 1869, an order was received from BUDOCKS to "erect with all possible dispatch a building upon the island for the use of the sick who are suspected to arrive in Portsmouth in about a month or 5 weeks from this date." The civil engineer of the Navy Yard Mr. B. F. Chandler, erected a building in 32 days, at a cost of \$2,500. The building had formerly been an old wooden barracks used as negro quarters in the Navy Yard. The main building was 132 feet long by 19 feet wide, divided into three wards. The cook house was 25 by 15 feet and had a small sleeping room in the attic. It was provided with a large galley or range, closets, sinks and so forth. The dispensary and storeroom was 22 feet square and had two small rooms in the attic. There also were quarters for the watchman, some sheds, an outhouse, privies and wooden tanks for storage of rain-water.

The wards were heated by large, cast-iron stoves and the walls were whitewashed. No arrangements were made for ventilation for that was supposed to be needless where the wind could whistle at its own sweet will through cracks and crevices in its old frame shell. This flimsy structure exposed to storms and rough weather of the coast is now greatly dilapidated (1879). Foundations are settling and giving way

in every direction, the sides of the ward sag and gape, the roof is leaky, the floors are broken and the doors and windows afford little protection from the weather.

Dr. Cleborne described the island as being the most bleak, barren spot that could be conceived. It was certainly no place for sick men, he said, and most patients arriving there preferred to remain on board the ships, an opinion shared by the medical officers of the ships. The only practicable use of the island, in Dr. Cleborne's opinion, was for chowder parties. Dr. Cleborne said that a watchman was employed at \$730 a year to guard this pile of shingled lumber which at best was fit only for firewood and would probably never be used again for hospital purposes.

On the other hand, Dr. Cleborne said, if a small general hospital were located on Seavey's Island, patients with yellow fever could be removed immediately to it on arrival. He pointed out that experience at the Pennsylvania Hospital proved that there was no danger from personal contagion if foamites were not brought in on the clothing of the sick. He recommended, therefore, that ships anchor in the lower bay where they should be left until cold weather and after taking down fresh clothing, the patients could then be immediately moved to the hospital. He recommended immediate removal of the quarantine hospital and pest house which probably would be purchased for a small sum or exchanged for Wood Island. Here the isolation of the sick could be complete yet within easy access of the Navy Yard by means of a hospital boat.

Dr. Cleborne described the currently-used pest house as a small frame building belonging to BUDOCKS, situated on the eastern extremity of Seavey's Island near the river front. It was fitted up for the

accommodation of sick and smallpox patients. Fortunately, there had been little necessity for its use. The pest house (1879) contained 4 iron bedsteads, bedding, hospital stores which were placed in charge of the Sargeant of Marines. This man and his wife had been selected and approved by the Bureau on account of their having had smallpox, their williness to take charge of the medical property and to nurse any patients in return for the privilege of occupying the house.

On the northeast point of the Navy Yard near the bend of the back channel the cemetery was located. It was a small, uneven patch of ground, enclosed within a wooden fence and in appearance it was in keeping with the hospital. The graves were shallow and the soil unsuitable for burial purposes. It is a well observed fact, Dr. Cleborne observed, that the rapid decay of bodies depends largely upon the facility for the change of air, hence rubble and sandy soil cause it to decay much quicker than marl or clay. The coffins in this ground should, therefore, be covered with a layer of quicklime and ashes and with four or five feet of rubble on which sod should be placed. Quite a number of officers, seamen and marines are buried here to some of whom headstones of marble and wood had been erected. Many of the latter are in a state of decay and should be replaced by zinc tablets which are cheap and will withstand the weather. The graves are in shocking condition, some having fallen in and almost disclosed their contents. In short, the place is kept in bad order and presents a forlorn, neglected appearance. A remedy for these evils would be to transfer the care and control of the cemeteries and the burial of the dead to BUMED where they appropriately belong.

In 1890, it was reported that a contract was made with J. J. Filbrook of Portland, Maine for the construction of new sick quarters on Seavey's Island adjoining the Navy Yard for the sum of \$38,967. The work was commenced immediately.

PORTSMOUTH, VA.

The Norfolk Naval Hospital, Portsmouth, Va., is one of several for which claims have been made that it is the oldest naval hospital. This claim is debatable, yet considerable substance to the claim is evident.

The late CAPT Richmond C. Holcolm, MC, USN, while commanding officer, of the hospital wrote and published at his own expense the only book-length history of any naval hospital. This book, consisting of more than 500 pages written was in 1930; it was titled, "A Century with Norfolk Naval Hospital, 1830--1930," subtitled "A Story of the Oldest Naval Hospital, the Medical Department of the Navy, and the Progress of Medicine Through the Past 100 years." The book was published by the Printcraft Publishing Co., of Portsmouth, Va.

Captain Holcolm, in his preface, pointed out that the story of the Norfolk Naval Hospital is inseparable from the story of the Medical Department of the Navy, its fortunes and its annals. The story is inseparable from the chronicle of progress made in the medical sciences which actuates the development of all hospitals and being a naval hospital it is sensitive to those political and economic influences which have tended to develop the Navy. Always the hospital is a part of the Navy but situated among Virginians and sharing the vicissitudes of life with them.

This book has served for many years as a reference point for many aspects of the history of the Navy Medical Department. Not always are the data recorded in the book accurate, and many references tend to favor Norfolk Naval Hospital in a chauvinistic manner. Nonetheless it is

a valuable reference, serving as a starting point for an objective analysis not only of the Norfolk Naval Hospital but also an for the further research into Navy medical history.

The land upon which the naval hospital Portsmouth, Virginia is located was first purchased with tobacco. Permanent settlements by the white man in the Virginia colony began in 1607. The climate and soil of Virginia was ideal for the cultivation of tobacco and it grew to be a principal source of wealth. The tobacco plant was believed to have miraculous healing powers and as such it was known as herba panacea, herba santa, and sana sancta indorum. So dependent upon the cultivation of tobacco and its exports were the early Virginians, that it became a medium of exchange.

All the land in the British Colonies, technically was owned by the Crown. To encourage colonization, it was customary for the King to convey ownership of various parcels of land in each of the colonies either for a very small sum or at no cost at all. In most instances, little attention was paid to the prior claims of ownership by the native Indians. At first, of course, only those lands bordering on the ocean or on navigable rivers were desirable and occupied by the settlers.

In his book, Captain Holcomb traces the ownership of the land on which the naval hospital now stands from the early 1600's down to the early 19th century. These land records have been preserved in their entirety and show that a Colonel Newton was the last private owner of the property before its acquisition by the United States. On 29 November 1827, some 61 acres was acquired from a son of Colonel

Newton for \$9,000. The records indicate that the original purchase of this land by the Newton family, was made in exchange for 394 pounds of tobacco.

Norfolk Naval Hospital is located on a strip of land which extends on the south border of a protected harbor known as Hampton Roads, at the mouth of the James river. Hampton Roads is one of the foremost natural harbors of the world and is a secluded harbor off Chesapeake Bay. The city of Norfolk is to the east of Portsmouth; this entire area has been an important seaport for longer than the United States has existed.

Norfolk Naval Hospital was authorized by Congress under the Act of February 1811. Although authorized, no land was acquired until 1827, following which construction of the hospital began almost immediately.

The bulk of U.S. Navy activities in the first quarter of the 19th century were centered in the northeast, that is, in the New England States. At the same time, New York and Philadelphia were active ports as were Norfolk, Charleston, Savannah and Pensacola. In the 1820's, greater Navy activity began in the Chesapeake Bay/Hampton Roads area. Although medical attention had been provided in that area largely through the use of station ships, simultaneously many Navy patients had been treated in the first Marine Hospital at Norfolk. The First Marine Hospital at Norfolk was also the first Marine Hospital established by the United States. Originally provided by the State of Virginia it served as a hospital from 1787 until acquired by the United States on 20 April 1801.

The early history of the Marine Hospital system is not too clear. Probably most if not all were jointly staffed by physicians under the jurisdiction of the Treasury Department, aided by Navy surgeons. In any event, soon after the Marine Hospital at Norfolk was acquired by the United States, SECNAV issued the following orders to Surgeon General Balfour, then the Senior surgeon in the Navy:

"Navy Department, 19 August 1801

Dr. Balfour Norfolk, Va.

After the 30 of September, next, you will take charge of the hospital at Norfolk. You may offer the place of Surgeons Mate to Dr. Starke, late of the Navy, who is now at Norfolk. If he declines accepting it you will be pleased to select a suitable character and let me know his name and he will be commissioned as a Surgeons Mate in the Navy.

I am Sir,

RT. Smith"

Dr. Balfour served as the officer in charge of the Marine Hospital for only a short while when he was superseded by Dr. Philip Barraud, apparently a civilian. No documentary evidence has been found to confirm similar practices at the other marine hospitals, but there is a presumption that this practice was common. In the meantime at the more important navy yards and stations medical attention was also provided by the use of makeshift facilities ashore in conjunction with the use of ships tied up at docks in those areas.

By December 1826, a plan for a naval hospital had been accepted from John Haviland, a Philadelphia architect, for the construction of a hospital on the site at Ft. Nelson, Portsmouth, Va. Captain Holcomb reports that the American Beacon of 19 March 1827, announced Mr. Haviland's plan had been accepted by proper authority and that construction of the

naval hospital was to begin shortly. According to the records, work began on the Norfolk Naval Hospital, April 2, 1827. The hospital was described by the architect:

"This building is constructed of granite and free stone three stories high on a basement of 12 feet. Its form is that of a hollow square 172 feet on its principal front by 192 feet in depth. Its central facade faces to the northeast and Norfolk and is embellished with a bold doric portico of 10 columns accessible by 20 steps that stretch 92 feet, the whole length of the portico. The whole of this front is finished of chisel--dressed Virginia freestone; all other external surfaces of this edifice is finished with hammer-dressed granite.

"The center part of the two longitudinal or side elevations recede 8 feet leaving a 40-foot wing at each extreme, the recess thus formed is filled with a piazza floor post and railing to each story from which every room has access, the windows being finished down to each floor combine the property of doors. Similar piazzas are carried around the interior of the hollow square. In the rear front is disposed the baths, water closets and reservoir, insulated by the main building but accessible under cover in each story by means of a piazzas.

"The whole of the building is made fireproof with arched ceilings of brick work with the exception of the two upper floors of the principal front, and finished in every other respect in the most solid substantial and approved manner with the best materials of their several kinds, and at the

same time with the most simple and economical style of finish.

"The roofs are covered with Welsh slate, the portico gutters and conductors of copper. It will be seen that the rooms of the whole building are of the most improved dimensions, particular attention has been paid to the very important properties of ventilation, warming, superintendence and classification of the different wards and the necessary conveniences required at each department. Four fire proof stairways, one at each angle of the plan, afford with the assistance of piazzas, private and easy access to each room.

"The culinary department is located in the arched basement of the front nearest the apartments of the superintendant with the bakery and laundry joining. The fuel, storerooms, larder and dairy occupy the rooms formed by the foundation of the portico contiguous to the kitchen and warhhouse. The water power for baths, closets, culinary, laundry and chemical purposes are at convenient command from the elevated portion of the position of the reservoir, fed from the roof and wells, adjoining. Every other desired property of this institution promises to be effected in the plan. This edifice is calculated to accommodate from 300 to 500 beds for sick besides sufficient rooms for the superintendants, doctor, nurses, domestics and the public offices belonging to them."

Dr. Holcomb described the construction procedure in a play-by-play account. Construction was being accomplished simultaneously at Philadelphia, New York, Boston, and Pensacola; in each location construction was halted from time to time owing to exhaustion of funds. In July 1830, construction was far from complete, but it was necessary to place the North Wing

into operation. Apparently the rush to begin the delivery of health care in the Norfolk Naval Hospital was given emphasis when the Navy found itself with no accommodations for the care of the mentally ill. A letter from the Secretary of the Navy to Dr. Thomas Williamson, the first commanding officer, dated 16 July 1830, suggests this circumstance. It appears there was a lieutenant, unnamed, at the Gosport Navy Yard (Portsmouth, N.H.) who was suffering from a partial aberration of the mind. The lieutenant had been "lately attacked with this affliction in a more aggravated form, requiring him to be subjected to a state of constant confinement and restraint." SECNAV suggested that since there were no such accommodations in Boston for the care of this type of patient, the Naval Hospital Portsmouth, Va., would be designated for that purpose. Accordingly Dr. Williamson was ordered to prepare such accommodations and the lieutenant apparently was transferred from Gosport to Norfolk.

Dr. Williamson remained as officer in charge of the hospital only about a month after it was opened. Surgeon W. P. C. Barton, later to become Chief of the Bureau, assumed charge of the hospital in September 1830, a post he held until the following summer.

Analysis of the documents and the reports written by Dr. Barton during his Navy career, leads to the belief that Dr. Barton was a self-appointed guardian of the United States Treasury. Upon assuming charge of the hospital, Dr. Barton immediately conceived the idea that supplies had been purchased way beyond needs. In his correspondence with the Secretary of the Navy he uses such words as fraud, speculation

and embezzlement, freely in the reports he made; all of these reports he published in a book titled "Statutory History of the Naval Hospital Fund with Remarks on Hospital Expenses and the Necessity for Retrenchment Embracing Principles on Which the Bureau of Medicine and Surgery is Based." This book was published in Washington, in 1843.

In his book, Dr. Barton reported that he had been sent to the Norfolk Naval Hospital for the express purpose of organizing the institution on some sure basis of economy and system. Dr. Barton reported that it was his immediate impression that the large amount of the expenditures at Norfolk were not only unwarranted but that he was convinced that some system of fraud and peculation had crept unnoticed by the surgeon or the commanding officer into the provision crib. His examination of the accounts proved to him thus his impression had been correct.

The ration cost at that time was 25¢ per day. Dr. Barton developed a rather complex accounting system; by discharging certain employees, who he considered to be unnecessary, and by other methods of economy, Dr. Barton reduced the ration cost to just slightly more than 5¢--day--patient. Even so, Dr. Barton, in calculating the cost of personal services was liberal enough to provide an additional sum which in the end figured out to be a cost of 12½¢--day--patient, including not only the food, but the salaries of the preparers of the food. To effect such economies, however, the patient ration was pared to the bone and the quantity of the assistant surgeons' ration was correspondingly reduced. Part of this economy was accomplished by dismissing the washer woman who he discovered was getting hand outs from the kitchen instead of feeding

herself as he expected her to do. Her salary had been \$15.00 a month; Dr. Barton solved this problem by discharging her and putting the washing out at piecework.

In the 1830's, it appears that the hospital reservation included some 60 acres. By the means of reclamation of low land and additional small purchases the area of the hospital complex has been increased to about 135 acres of which 109 acres are hard land, the remainder being marshy or subject to flooding at high tides. The hospital site and its buildings have been in continuous operation ever since 1830, with the exception of a 2-year period during the Civil War, when the hospital was in the hands of the Confederates. Many repairs and improvements were made to the hospital during the period of its existence; the original structure has been superseded, although still in use, by a new multi-story building dedicated in 1960.

In 1907, the hospital was vacated, with the patient being transferred to a tent camp erected in the rear of the reservation. The tent hospital was maintained until February 1909, when renovation of the hospital was completed and it was reoccupied. This remodeling was accomplished at a cost of more than \$200,000, the old building being stripped except for the outer masonry and a new fireproof structure erected within the walls of the old hospital. New wings were completed in 1910, providing a capacity of 314 beds in the main building and 47 beds in the contagious hospital, a separate structure. During war emergencies, notably World Wars I and II, numerous temporary wooden buildings were erected on the hospital grounds to accommodate the increased numbers of patients.

Before construction of the new hospital in 1960, the old hospital was rated as having a capacity of 605 beds in permanent construction and 993 in temporary structures. At the end of World War II, in the late 1940's, the hospital was generally rated as a 1,200-bed facility. The peak census of patients was reached during World War II, when 3,187 were on board.

The purpose of the Naval Hospital Portsmouth, Va., is to provide medical support to Navy activities in the Norfolk area. The hospital is located in a suburban area on the west bank of the Elizabeth river. It is located approximately 2½ miles from the Naval Shipyard, Portsmouth, and 10 miles from the Naval Station Norfolk. During World War II, the patient load was eased by the construction of a hospital in the Naval Operating Base in Norfolk as well as the use of several convalescent hospitals in the vicinity.

Since 1902, when it was first established, a Class A Hospital Corps School has been a subordinate command of the naval hospital during most of the intervening period. At other times, a Class B or intermediate-course school for the instruction of hospital corpsmen has also been a part of this hospital.

Prior to World War II, the greatest emphasis on Hospital Corps training was in the basis school. Following World War II, more stress was placed on advance technical training. Typical of the enlisted training at Norfolk Naval Hospital was the report for 1962, which indicated a total of 382 graduates from 3 schools during the fiscal year 1962. These graduates were divided among the Pharmacy School,

the Medical Administrative Technic School and the Advanced Hospital Corps technic School. The length of the courses of these schools were 6 months or more.

Dr. Gatewood, in 1893, referred to a temporary hospital established at the Navy Yard for the treatment of the sick on that station. It was a very poor structure and only a few years after its occupation was unfit for use by reason of decay and other causes. It was used nonetheless until the occupation of the Naval Hospital, Portsmouth, in 1830.

The first site in the Norfolk area selected for the erection of a naval hospital was on Craney Island and its transfer from the War Department was secured in 1826. The site was far from satisfactory, however, and the conditions attached to the transfer were not altogether agreeable. In view of the unsatisfactory nature of the Craney Island site, Ft. Nelson was secured from the Newton family as an alternative site.

Dr. Gatewood (1893) described the Norfolk naval hospital:

"This hospital, constructed of granite, presents an imposing appearance its basement and three stories being adorned by portico 110 feet long and 17 feet wide approached by broad stone steps and containing 10 lofty doric columns supporting a handsome entablature and pendiment. The block plan was chosen with a front of 195 feet facing the northeast and two perpendicular wings extending 170 feet. The work of each is 44 feet except for 123 feet of wings adjacent to the front. Here the deficiency is supplies by an outside balcony on each floor. The fourth side of the square is occupied, in part, by a two-story annex

60 feet long and 20 feet wide. This is joined to the wings by balconies that extend on every floor around the entire court.

All of the wards are in the wings; each wing has 8 on a floor, 5 being 26 by 15 feet and three, 35 by 10 feet. They all connect by arched openings forming alcoves on each side and except on the third floor have vaulted ceilings with a maximum height of $11\frac{1}{2}$ feet. Each has two opposite windows, painted wood floor and plastered walls. Each contains 4 beds and furnishes 1,088 cubic feet of air and 98 feet of floor space to a bed. A hall, $12\frac{1}{2}$ feet wide, traverses the length of the floors of the main building having the rooms in front. Stairs from these halls connect these various floors. On the first floor are offices, reception rooms and an officers' dining room. On the second floor are quarters for resident officers and for sick officers. On the third floor are storerooms, apothecaries room and quarters for employees. The nurses' rooms are in the wings, one at each end of the row of wards in the narrower portions with water closets opposite and stairs connecting the different storerooms. These closets are used only by special cases as the main water closets are in the annex where also are the smoking rooms, washrooms, and barber shop. In the general basement are kitchen, laundry, mess room, store rooms, and quarters for employees.

The court covers a large cistern into which water is pumped from a deep well extending into a natural underground current supplying 30,000 gallons daily. There are also large iron tanks on top of the annex for storing this water. The pump and boiler house are in the rear. Steam is supplied for heating the building for the pumps in storing water and in connection with a perfect fire system. Ventilation is accomplished by doors and windows; the long summers and mild winters allow a free circulation of air most of the time. The sewer system is complete and independent; all fixtures are trapped and the abundant supply of water allows frequent flushing. The pipes discharge into the river north of the building."

Dr. Gatewood reported that a number of electric lamps light for the hospital. He pointed out, however, that gas fixtures were retained for use when the electric power failed which apparently was a common occurrence in the 1890's. The gas supply was obtained from the city of Portsmouth.

Well situated in the midst of pine trees was a frame building used for contagious diseases. There were also the usual out houses such as wood sheds, stables, a greenhouse, and a boathouse. To the south of the main hospital was a good residence for the medical inspector in charge. His assistants, a passed assistant surgeon and two assistant surgeons, resided in the main building. At this time, the south wing of the hospital was not used as the average number of patients daily under treatment was 30. The hospital, of course, was designed for a maximum of 200. From 1890, to 1892, there had been 593 patients treated

in the hospital. The climate was described as rather debilitating in the summer on account of the high temperature, although at night there was generally a pleasant breeze allowing refreshing sleep. The spring and autumn were described as being delightful; the winter, as a rule, was mild, although snow and ice were common in January and February. In the early autumn, cases of malarial fever were admitted frequently from the Navy Yard; typhoid fever was not a particular problem. Pulmonary patients did better at this hospital than any other naval establishment. Dr. Gatewood pointed out that the increasing importance of the Norfolk Navy Yard and the large number of Navy vessels visiting these waters made it very desirable to have a hospital so delightfully situated and so entirely free from epidemic influences.

The present 15-story structure housing the Naval Hospital, Portsmouth, Va., was commissioned 22 April 1960.

During the year 1959, a total of 192,000 outpatients were treated in the hospital clinics. The total of 12,149 admissions during 1959 and the same year 4,500 babies were born in the hospital.

This hospital had for many years been fully approved by the Joint Commission on Hospital Accreditation. It was also approved for internship and residency in the clinical specialties, of surgery, internal medicine, obstetrics and gynecology, orthopedic surgery, and pediatrics combined in all respects with the rigid standards and requirements of the council on medical education and the hospitals of the American Medical Association and the various specialty boards.

The hospital was planned in accordance with the Defense policy for joint utilization of military health and medical facilities and services of the Portsmouth naval hospital had been recommended for

designation as the major regional treatment facility in the tide water area for hospitalization of all members of the armed forces.

It is the third largest organization in the city of Portsmouth; some 620 local citizens were civilian employees and in addition, the hospital had a total of 325 officers and 900 enlisted men, on the staff.

The annual report for 1889, indicated the treatment of 179 patients at Norfolk Naval Hospital during that year. There were 4 deaths. Medical Director Cleborne repeated a recommendation made in previous years, that improvement of the hospital and grounds was increasingly necessary. The southwest wing of the main building, he said, required extensive repairs and an outlay of \$30,000 to \$50,000 was needed to put it in perfect order, improvements would include the production of gas, water, and heating apparatus; he added, \$10,000 carefully spent at once would place the wards in serviceable condition and prevent further decay.

The trespassing upon the grounds, petty pilfering, damage to shrubbery, trees, fences and so forth, which had been common in previous years, was curtailed to some extent by limiting the number of people who came on the grounds by requiring them to secure permits before doing so. It appears that it had been common practice for civilians to gather oysters, crabs and other shell fish from the bay by passing through the hospital compound. These oyster beds had been planted years before by previous commanding officers and they were regarded by Dr. Cleborne as a readily available source for the patients and employees of the hospital. It was recommended that electric lighting should be installed in the hospital to supersede the present method of lighting by gas. In the previous year, severe damage had been done to the hospital and its grounds by a severe gale which blew down several

trees and caused considerable water damage to the hospital building.

QUANTICO, VA.

The Naval Hospital, Quantico, Va., was established for medical support to the Marine Corps Base in the same location. The hospital was commissioned 1 July 1941. The original building was erected as a dispensary at a cost of \$943,000. The hospital complex is comprised of about 40 acres.

The original building was a brick, colonial structure with a central portion of three stories and two two-story ward wings. A new west wing was added in 1942, and in addition a new two-story building, combining the maintenance spaces and an isolation ward was constructed. A temporary wooden H-shaped one-story building was constructed to the rear of the hospital in 1942 to provide additional ward space.

Hospital area was increased by 20 acres in 1943, by accession of a tract south of the then existing boundary in exchange for another southward tract which was transferred to the Marine Barracks. This increased the acreage of the compound to about 60. Thirteen buildings were moved to the hospital from the Portsmouth, Va. area by barge and used as quarters.

The hospital is located near the Marine Barracks reservation bounded on the north by Quantico Creek, on the east by the Potomac river, on the west by the Richmond, Fredericksburg and Potomac Railroad and the town of Quantico, Virginia on the south. Of the approximate 60 acres, 45 is on high ground 17 of which is along the creek and along the western half of the southern boundary. Electricity is furnished by the Virginia Electric Power Company and gas is obtained from the Virginia Distribution Corporation.

The peak census of patients was reached during World War II when the number on board was 609. At the close of World War II, the isolation ward was converted for use as a storehouse. The general rated capacity is now slightly more than 250, all in permanent construction.

QUONSET POINT, R.I.

The Naval Hospital, Quonset Point, was commissioned as a hospital on 1 July 19⁶8. Previously, this facility had functioned as a station hospital since 10 March 1941.

The medical facilities here were established to provide support to the Naval Air Station on the same site established just prior to World War II. At that time, the medical facilities were designated as a dispensary with CAPT C. W. Carr, MC, USN as the senior medical officer. Originally, the medical facility was intended to function as a dispensary for the temporary delivery of medical attention to military and civilians on station. In February 1948, the mission of the facility was changed to include inpatient treatment to eligible dependents as well as to provide maternity care. At that time, the dispensary provided medical services for 3,500 military, 9,000 dependents and 5,000 civilian employees.

The dispensary was reclassified as a station hospital in 1953, and additional professional services were provided. At this time, the hospital was providing medical attention to approximately 23,000 people. At present, the hospital provides comprehensive medical services to approximately 55,000 including active duty, retired military personnel and their dependents residing on the west side of Naraganset Bay. Personnel from about 50 separate commands, representing each of the Armed Services, in addition to the Naval Air Station, Quonset Point, are served by the hospital.

The normal bed capacity of the hospital is 100 with capability

of being expanded to 150.

The first commanding officer of the hospital in its new designation was CAPT Sidney I. Brody, MC, USN.

The main hospital structure containing administrative offices is a two-story brick building; radiating from the main hospital building are a number of one-story ward buildings, all connected by lateral corridors.

ROOSEVELT ROADS, P.R.

The Naval Hospital, Roosevelt Roads, was officially placed in commission on 1 January 1971. The formal commissioning exercises were not held until 4 January 1971. The Naval Hospital, Roosevelt Roads is the most recent of a series of medical facilities that have been provided in Puerto Rico by the Navy since shortly after the acquisition of these islands in 1898. The most important of the previous hospitals was the one designated as Naval Hospital, San Juan.

ROTA, SPAIN

This medical facility was designated as a naval hospital on 1 July 1968. This hospital provides medical support to the largest Navy installation in Europe. Navy activities are conducted on a more than 6,000-acre area which is leased by diplomatic agreement with Spain. The base provides support to elements of the Mediterranean Fleet. On station are a number of commands including the air and drydock facilities, navy communication, air station, and naval hospital. The hospital provides medical support to about 4,500 Navy and Marine Corps personnel, about 200 American civilians and 1,400 Spanish civilian workers, as well as 4,400 military dependents and about 300 dependents of United States civilians.

Rota is located on the southern coast of Spain, bordering on the Mediterranean Sea, not far from Cadiz.

Navy medical facilities have existed in Spain at various times for more than 125 years. The first naval hospital in Spanish territory was in operation at Port Mahon during part of the first half of the nineteenth century. Port Mahon is located on Majorca in the Balearic Islands, east of Spain.

SACKETT'S HARBOR, N.Y.

Navy medical facilities were established at Sackett's Harbor, New York during the War of 1812 in support of naval activities on Lake Erie during that time. References to a Navy medical facility at Sackett's Harbor describe a two-story building 25 ft. wide and 150 long located on Navy Point during the War of 1812 and used by the Navy as a hospital. There is a probability that hospital facilities in the Sackett's Harbor, during the War of 1812, were provided jointly for Army and Navy personnel.

At the present time the State of New York maintains a conservation department known as the Thousand Islands State Park Commission. Most historic references to the War of 1812, as it was fought in the Sackett's Harbor vicinity refer primarily to Army action. It is known that the Navy vessels operated in and around Sackett's Harbor and it is suspected that sick and wounded personnel may very well have been treated in a section of the barracks of Ft. Tompkins before it was torn down about 1845.

ST. ALBANS, N.Y.

At the onset of World War II, it was readily obvious that additional hospital beds would be required in the Metropolitan New York area and that the Naval Hospital, Brooklyn, could not be expanded to supply these needs. Several private and municipal hospitals in the area were inspected with a view of determining their suitability and availability for use at naval hospitals but none was found to meet the needs of the Navy and consequently it was decided that a new hospital would be built. Inspecting teams surveyed various spots in the metropolitan area and recommended on 30 March 1942 the St. Albans Golf Club as the most suitable location for a naval hospital.

The SECNAV, on 10 April 1942, approved the St. Albans site and steps were immediately taken to acquire the land and to erect a hospital. Architectural and engineering plans for a 1,500-bed hospital, 250 of which were planned in permanent construction and the remainder in temporary wards, was made by the architectural firm of York and Sanger. The estimated cost of construction was \$11,230,505. The land was acquired at a cost of \$565,000.

A shortage of steel required that construction of the permanent buildings be postponed and work on them was stopped on 15 October 1942. Foundations for the administration building, subsistence buildings and two wards with connecting corridors had been completed by that date as well as the power plant, laundry and garage. Construction of 36 temporary ward buildings was completed and the Naval Hospital, St. Albans, was

established on 24 November 1942 with CAPT L. L. Pratt, MC, USN, as commanding officer. Formal commissioning ceremonies were held on 15 February 1943. At that time there were 1,500 beds available and 1,150 patients on board. Six more ward buildings were completed by 1 April 1943 and by 1 October 1943 an additional 31 wards with 1,000 beds had been built.

It was determined that the site of the Brooklyn Naval Hospital would be needed for the Navy Shipyard at the end of the war, and consequently recommendation was made that the permanent hospital at St. Albans be increased from 250 permanent beds to 1,000. On 26 February 1945, the Federal Board of Hospitalization and the President approved the construction of a 1,000-bed permanent naval hospital at St. Albans.

The naval appropriation bill for fiscal year 1945 provided \$15 million for the construction of a 1,000 bed hospital at St. Albans. The SECNAV approved construction of this hospital on 6 June 1947. St. Albans naval hospital is the navy tuberculosis center in the eastern United States.

The temporary buildings provided an emergency capacity of more than 5,800 beds. The peak census of patients reached during World War II was 5,213.

The Naval Hospital, St. Albans, occupies a site formerly occupied by the St. Albans Golf Club, situated on the Long Island Railroad about 14 miles east of Grand Central Station. With the disestablishment of the Naval Hospital, Brooklyn, the St. Albans hospital was the only

remaining naval hospital in the Third Naval District. During construction of the permanent hospital buildings the hospital consisted of three types of buildings; temporary, semi-permanent and permanent with 73 wards extending to either side of a rectangular passageway. The ward buildings were of one-story construction of wood with composition siding each ward having the capacity of 35 beds. The reservation of 122 acres was surrounded by 4,000 feet of cyclone fence, curbed with concrete. Utilities were received from the city and county of New York; water from the Jamaica Water Supply Company; electricity from the Consolidated Edison Company; and gas from The Brooklyn Union Gas Company.

The present naval hospital was dedicated 15 August 1951, with a capability of caring for 606 patients. The new hospital was located directly in front of the World War II temporary hospital building. The hospital is of brick construction with aluminum windows, lime and limestone trim. Several different colors of bricks were used in the exterior to achieve the buff shade desired by the architect. The central structure in the group is a six-story administration building. Administrative offices are on the first floor; the second floor includes a staff conference room, medical library and offices for clinics. Additional clinics were located on the third floor. The six ward buildings of the permanent structure are three stories high plus a basement and connected with the administration and subsistence buildings by enclosed corridors.

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SAN LEANDRO, CALIF.

The Naval Hospital, San Leandro, was constructed during World War II in the same general vicinity of the Naval Hospital, Oakland, as this hospital occupied a part of the parcel of land acquired for use of that naval hospital. The Naval Hospital, San Leandro, was specifically established and constructed for the purpose of providing a neuropsychiatric center for patients suffering from fatigue states and severe stresses of combat. Construction of the hospital commenced on 6 January 1944 and the hospital was commissioned on 15 August 1944 with CAPT F. L. McDaniel, MC, USN, in command.

The hospital was organized as a general naval hospital for the treatment and care of all types of casualties, but with particular emphasis to neuropsychiatric disabilities. There were 25 wards with a total capacity of 1,621 beds. Only 500 of these beds were assigned to general medicine and surgery the remaining 1,100 being designated for NP patients. It had been proved medically advisable and absolutely essential that the hospital have all the facilities of the general hospital. The X-ray department with its medical officers and staff were invaluable in completing the studies on each patient. The four dental officers accomplished a great deal of essential dental work. Physical therapy contributed a great deal to the healing of all types of disabilities.

The organization of the staff and hospital facilities as a general hospital proved to be the only adequate method to insure complete treatment of the fatigue states and psychoneurosis. Complete studies of every patient and the interchange of medical opinions among the members of the staff resulted in the best methods for study, treatment

and care of all patients, especially those with in fatigue states and psychoneurosis. The rehabilitation program was compulsory and proved to be the only practical method of insuring adequate treatment for all patients. It resulted in suprisingly little resentment on thepart of the participants. Programs resulted in treatment for all in a group and actually accelerated the recovery of patients with general improvement in morale and a decrease in the length of hospitalization. In addition to the routine treatment and psychotherapy of the rehabilitation program, various other individual and special types of psychotherapy were utilized in keeping with individual needs and demands.

The limitation of trained neuropsychiatrists and the large number of neuropsychiatric disabilities in war time made individual psychotherapy quite difficult. These patients had so many factors of their own illness in common, including age, etiology, symptomology, and physical findings, that it was believed group treatment seemed advisable. Therefore, discussions with their respective medical officer of groups of 20 patients were utilized. As a result of this treatment more patients in a group received the equivalent of individual psychotherapy.

Modern treatment concepts suggested the use of motion pictures as psychotherapeutic methods in selected cases. Two films demonstrating the many factors which operate and terminate in fatigue were called introduction to combat fatigue and irritability; these films were shown to provide an understanding and identification by the patients and was believed by the majority of the medical officers to be a beneficial adjunct to individual psychotherapy. An additional film, "Assignment Home," was shown to all neuropsychiatric patients prior to discharge

from the service. As a terminal phase in general psychotherapy this film was very beneficial to the patients returning to civilian life. In general, audiovisual methods were an excellent adjunct to the general and individual psychotherapeutic methods used.

Narcosynthesis was used in special cases for both diagnostic and therapeutic purposes. It was the conclusion of the staff that, in general, this type of therapy had limited value in the treatment of fatigue states. However, in patients with prolonged combat guilt very favorable results were obtained and at the same time effected a short cut to a long, analytical approach.

Hypnosis therapy was used as an aid both diagnostically and therapeutically in selected patients; it proved to be useful though of limited value by several members of the medical staff. Insulin therapy, shock therapy and narcosynthesis therapy were also used with varying degrees of success.

The hospital complex consisted of more than 50 buildings generally intended only for temporary use until the end of the war emergency. At the end of the war the buildings were either torn down or returned to the use of the Naval Hospital, Oakland. The hospital was disestablished 1 September 1946.

SAMPSON, N.Y.

The Naval Hospital, Sampson, was established to provide support for the Naval Training Center established at that location. The site for the naval hospital was approved 14 May 1942 and on 1 June the work of clearing the site for construction began. Actual construction was started in July and the hospital was officially designated as such on 26 September 1942, with CAPT Claude W. Carr, MC, USN as a first medical officer in command.

The first meal was served in the new facility on 15 January 1943. Official commissioning ceremonies were held 27 February 1943.

The Naval Hospital, Sampson, was located between the Geneva-Ovid Road and Seneca Lake, directly north and adjacent to the Navy Training Center, and north of Willard State Hospital. The hospital grounds were composed of 453 acres, the extreme southern tip of the tract of farms and vineyards. The hospital and training station were named in honor of RADM W. T. Sampson, of Spanish-American War fame.

At the time of commissioning, the hospital consisted of nine permanent buildings constructed of stone. These included the laundry, medical storehouse, garage, maintenance building, firehouse, gatehouse, animal house, brig, and central heating plant. The administration building, wards, quarters, and the remainder of the buildings were constructed of wood and intended to be temporary structures. The original cost of the hospital buildings was approximately \$6 million. Instructions of Waves in the Hospital Corps was conducted between June 1943 and January 1944, when it was discontinued owing to the opening of the larger Hospital Corps School for Waves at the Naval Hospital, Bethesda, Md.

During the war, the hospital was continuously being expanded to accommodate the increased number of patients. On 31 December 1943, the number of patients was 1,240. This number was increased in the following 12 months so that in December 1944 there were 1,500 patients on board. The largest patient census was reached in April 1945 when the census was 2,407. Outpatient and dependent care was begun in May 1943, during which year more than 1,500 patients were cared for. In September 1943, a dispensary was opened at Geneva, New York some 10 miles from the hospital as a more convenient point at which to treat outpatients. The hospital was disestablished 1 September 1946.

SAN DIEGO, CALIF.

When the Fourth Regiment of Marines returned from Mexican waters in the summer of 1914, they landed and encamped on North Island in San Diego Bay. This landing marked the beginning of San Diego as a great Navy/Marine Corps center. With the Marine Regiment was a field hospital unit manned by Navy Medical Department personnel. The senior medical officer of the field hospital was LCDR U. R. Webb, MC, USN who 20 years later as Captain, Medical Corps, was commanding officer of the Naval Hospital, San Diego.

The Marine Regiment remained on North Island only a few months, when with its field hospital it removed to a site in Balboa Park where it remained until the spring of 1917, as a part of the Panama Pacific Exposition. At the close of the Exposition it became necessary to expand medical facilities in the San Diego area owing to the involvement of the United States in World War I.

The buildings of the Exposition were well suited for occupation by and use as a Navy training camp. This camp was placed in commission on 20 May 1917. The camp's medical department which came to be known as the war dispensary was housed principally in what had been the headquarters of the park police, facing Park Boulevard near the site later occupied by the Canadian Legion building. The dispensary building provided space for an administrative unit and two wards of 25 beds each. The surgery building stood nearby in a locality known locally as Pepper Grove. As the training camp expanded, the war dispensary expanded, but for the most part the expansion of hospital facilities was by means of tent colonies. By the end of the war there were accommodations in the permanent buildings and tents combined for some 800 beds.

At the end of World War I it was apparent that Navy activities on the West Coast were necessarily going to be exactly expanded. During the war an air station had been established on North Island, a Marine Corps Base and Naval Training Center already were functioning, and plans were being made to expand each. San Diego Bay provided an ideal harbor, well protected from the Pacific Ocean and the whole area was being looked upon with covetous eyes by high ranking Navy officers as a permanent base for elements of the Pacific fleet.

On 20 May 1919, the SECNAV redesignated the war dispensary, Balboa Park, as a naval hospital. It was immediately seen that the building and tents occupied during World War I would be inadequate and plans for the construction of a permanent suitable institution were begun. City authorities recognized the economic advantage to be gained by moving in by the navy and offered for a hospital site, a tract in Balboa Park known as Inspiration Point. This site, consisting of some 22 acres, was located on a hilltop overlooking the city and affording a magnificent view of San Diego Bay. The Navy Department accepted the offer and the transfer of the land was approved by an Act of Congress, dated 11 July 1919. The original hospital construction-- begun early in 1920--was principally of buildings of three stories each, plus a basement.

The original buildings were planned in a rectangular formation with three patios in the center of the rectangle. The administration building faced generally westward. The original contract for construction specified a central administration building, flanked on either end with ward buildings, all three buildings in exact alignment facing

and parallel to the end of the canyon across which lies Park Avenue and Balboa Park. These three are the principal buildings now seen by anyone traveling eastward from center city. The buildings were constructed after the Spanish architectural style. Some 10 years were required for the completion of the first group of buildings. The first portion of the hospital was completed and the facility was formally placed in commission, 22 August 1922, with CAPT F. W. F. Weiber, MC, USN, in command. The first building provided bed space for about 300 patients but by 1923, the daily average census was about 400. The bed capacity shortage was taken care of by erection of tents in a space now known as the south patio. The medical and surgical buildings of three wards each and providing a bed capacity of about 350 brought the total bed capacity up to 618 when these buildings were completed in 1924.

By 1925, the Fleet concentration in the Pacific and the growth of shore activities of the Navy in San Diego, reached a point where even this number of beds was inadequate to meet the medical requirements in the area. The north ward building, containing 204 beds, a laboratory, an X-ray building, nurses quarters, and other structures were authorized and completed by 1928, bringing the bed capacity to nearly 900. A contagious building and Hospital Corps Quarters and Hospital Corps School were erected in 1928, at the south end of south patio.

Prior to 1929, sick officers had been cared for on the upper floors of the administration building. The administration building also provided

quarters for staff medical officers. In 1929, a sick officers providing 58 beds, and 4 officers quarters near the south end of the hospital compound were erected. After 1930, there have been few times when the patient census has been below 1,000.

The original 22 acres acquired in 1919 has been added to in four increments; the first of these was a plot of about $5\frac{1}{2}$ acres acquired in 1926; $15\frac{1}{2}$ acres more were acquired in 1937, by lease, and purchased in 1962; the third parcel was acquired in 1940, consisting of nearly 33 acres; and the final tract was added in 1942 when an additional 32 acres was acquired. All of the land now comprising the hospital complex was acquired from the City of San Diego and now is composed of nearly 100 acres.

During 1940, the capacity of the hospital was expanded by 5 one-story H-type buildings for use as wards. At the beginning of World War II, the hospital reservation contained 56 buildings with an authorized capacity of 1,424 beds; by the end of the war the expansion had been so great that the hospital was divided into six units with a total of 241 buildings on a combined acreage of 247 and at times, had more than 10,000 patients. The 147-odd acres on which the hospital expanded was city property within Balboa Park. These excess acres were returned to the city at the end of the war.

In these 6 units, Unit 1 consisted of the buildings within the reservation of the naval hospital, itself. Unit 2 consisted of 33 acres and 25 Exposition buildings located across the boulevard in Balboa Park; this area was leased by the Navy, in 1941. Unit 2 contained

of 239 tents with wooden decks. Unit 3, previously known as Camp Kidd while it served as a naval training area, was transferred to the hospital in 1944, and became the site of a Hospital Corps School. Unit 3 consisted of 22 Exposition buildings and 33 converted Army barracks on 33 acres of land in the central part of Balboa Park. Unit 4 consisted of 28 Army barracks on nearly 8 acres of land situated in the southwestern of the park. The barracks were converted, in 1944, into wards for convalescent patients. Unit 5 consisting of 11 buildings on 2½ acres was used as a storage center for the crew and patients. Unit 6 was the convalescent branch of the hospital, located at Rancho Santa Fe about 30 miles North of the main hospital. Unit 6 had 3 buildings belonging to the ranch and 6 converted from 13 Army barracks moved from an adjoining camp site. At the time of greatest patient load the patients in each unit were as follows:

Unit 1 --- 5, 354

Unit 2 --- 4,786

Unit 3 --- 949

Unit 4 --- 671

Unit 6 --- 254

Total patients 12,014

At the end of World War II, all units of the hospital, with the exception of Unit 1, were closed and all activities including the Hospital Corps School were concentrated within the basic hospital reservation again. In 1947, the rated bed capacity of the hospital was 2,079 with 1,348 beds in permanent construction. The estimated emergency bed capacity was more than 5,000.

Since the 1930's the Naval Hospital, San Diego, has consistently been the largest in bed capacity of all naval hospitals. It has been described in relation to its location, buildings, general physical equipment, as the finest hospital, civilian or military, in the United States.

Situated as it is in the San Diego area, it provides medical support to many Navy and Marine Corps activities including the vastly expanded Naval Air Station, Destroyer Base, Naval Training Center, Marine Corps Base, Supply Base, and dozens of miscellaneous Navy and Marine Corps activities as well as ships based in San Diego. During World War II, it cared for the largest number of wounded from the Pacific area. It was, at that time, a West Coast center for malignant diseases, their diagnosis and treatment.

During World War II, more than 150,000 patients were treated in the hospital. At the peak of World War II activity as many as 5,000 patients a month were admitted.

During the Korean conflict, more than 90,000 patients were treated between June 1950 and July 1953. In June 1954, the construction of new surgical building was started; it was commissioned in May 1957. In October 1955, a dependents medical care facility located at the Naval Air Station on North Island was transferred to the hospital and became known as the Naval Hospital, San Diego, Coronado Annex. The primary function of this facility is the medical care of dependents and for outpatient treatment only.

By the early 1960's, it was estimated that the naval hospital provided medical support to more than 100,000 military personnel including those on the retired list and in the Fleet Reserve. An additional nearly 125,000 dependents were also eligible for appropriate medical treatment. During 1961, the average monthly outpatient visits was nearly 50,000. Not only Navy personnel were eligible for and received treatment but also large numbers of active duty and retired Army and Air Force personnel. In addition, approximately 200 beds are available for Veterans Administration beneficiaries.

In July 1960, a section of the north patio garden was replaced and landscaped into a minurature garden; the funds for this landscaping was donated by a former Navy enlisted man, Mr. Tom A. Tamme Kashawabara. In October 1960, the city of San Diego began to fill in leased land formerly occupied by the hospital golf course which was demolished to permit construction of a beltline freeway. The conversion of a major part of this acerage into a parking lot for joint use of the hospital and the general public was accomplished.

By the late 1960's, it was estimated that nearly 1 million people, both military and their dependents and other civilians were entitled to and being served by the Naval Hospital, San Diego. The actual figures as of 30 June 1969 were: active duty, Navy and Marine---259,000; Army and Air Force 34,000; dependents, active duty-368,500; retired Navy and Marine Corps-80,500; dependents of retired and diseased personnel 161,000; and eligible civilian employees and others, 60,500. This total is 963,500.

The general mission of the hospital is to provide support for Navy, Marine Corps and other military activities in the San Diego area. In addition:

- 1) It performs functions of a regional hospital for military elements in the greater San Diego area and for specialized referral from military installations world wide;
- 2) It provides specialized care in 10 specialties for the Navy as a whole and for other authorized personnel;
- 3) It provides personnel for and trains and maintains two surgical teams, one casualty evacuation team and augmentation personnel to be immediately available to the operating forces when directed and to the district commandant in disaster control;
- 4) It operates a whole blood donor center;
- 5) It maintains more than 100 beds for Veterans Administration beneficiaries;
- 6) It conducts residency and internship programs for medical and dental officers and observerships for foreign medical personnel;
- 7) It provides on-the-job specialty training for Group X hospital corpsmen;
- 8) It conducts formal training in Group X hospital corpsmen in designated technical specialties;
- 9) It conducts inservice training of Group X hospital corpsmen;
- 10) It operates a regional data processing center for assigned activities;
- 11) It provides a care of the dead program;
- 12) It performs formal physical examination of candidates for Armed Services academies.

13) It provides logistic support to the Hospital Corps School, Class A; and

14) It operates the Coronado annex.

Residency training is provided in 16 medical specialties.

The Naval Hospital, San Diego, is a special treatment center for plastic surgery, neurosurgery, thoracic surgery, cardiovascular surgery, coccidioidomycosis, oncology, tuberculosis, ocular prostheses, radio-isotopes and laboratory procedures and radiation therapy. More than 2,500 members of the Medical Department and more than 800 civilian employees are required to maintain and provide health care at this hospital. The average patient load in 1969, was 1,923. The annual direct operating budget, in 1969, was almost 25 million dollars. During 1969, the average number of students on board in the Hospital Corps School, Class A, was more than 1,300. The staff of the school, as of 30 June 1969 was 29 officers, 101 enlisted men, and 10 civilians. The Hospital Corps School has been in almost continuous operation since 1930.

Between December 1941 and August 1945 approximately 172,000 patients had been treated in the naval hospital.

In October 1969, America's second major human tissue bank and the fifth of its kind in the world was opened at the naval hospital. LT John L. Wenerth, MC, USN, officer in charge, said at the time of its opening that within a few weeks the hospital would become a major source of freeze-dried body tissues for military hospital patients around the globe. The bank's mission was to try to make up the deficits of all

tissues but primarily skin and bone. It was hoped that this facility would increase the military supply five fold. The other tissue bank in the Western Hemisphere is also a Navy activity and is located at the Navy Medical Research Institute in Bethesda.

San Diego has long been known as a Navy town; this designation was particularly applicable by Navy men themselves, and particularly between 1920 and World War II. The principal daily newspaper, the San Diego Union, has consistently supported the Navy activities and particularly the naval hospital. In 1966, the Union published a series of articles relative to the history of San Diego including the development of Navy activities in that area. On 12 March 1966, the Union devoted its pages to a review of the Naval Hospital, San Diego. Some excerpts from that article are as follows:

"In a typical month last year, the Union said, Navy doctors at the hospital performed 1,100 surgical operations studied 45,500 X-ray films, ordered 93,000 laboratory tests, administered 4,722 inoculations, delivered 281 babies, and saw 44,600 patients in the outpatient clinics."

The newspaper predicted that those figures would run much higher in the next year and all the succeeding years. It was pointed out that the war in Vietnam had brought on a surge in the military population in San Diego and that the patient load in the hospital wards was nearly 25% more than the patient census of a year previously.

The newspaper pointed out that the man who keeps track of all of the activity in the hospital was RADM H. D. Warden, MC, USN, who wears the combined hats of commander of the naval hospital, commander of the Hospital Corps school, and medical officer of the 11th Naval District.

The convalescent branch, Unit 6, at Rancho Sante Fe was first opened for patients in February 1943. The property had been leased from the owner, John Burnham, for use as a convalescent and rehabilitation annex. In October 1944, 13 temporary type Army barracks buildings were acquired and moved from the village of Rancho Santa Fe to the Burnham property. These buildings were improved, rebuilt, and put to use as a convalescent and rehabilitation camp for enlisted patients. The original buildings on the site had consisted of a main house a five-room stucco cottage and a combination stable and studio. In the main building were nine bedrooms each connected directly with a bath and dressing room, a spacious lounge, a library, dining room, kitchen, garage, and office space. In the enlisted mens camp there were barracks for 288 beds, a galley and mess hall capable of feeding 500 men, a recreation hall and a building which housed a post office, barber shop, Red Cross, Library, and linen room. In the existing stable with the central office, examining and treatment room, sick bay offices for the educational officer and chaplain and storage space. This unit provided a total bed capacity of nearly 350 beds.

The Burnham property was composed of about 75 acres, $2\frac{1}{2}$ miles from the ocean at Solano Beach. Surrounding areas were a natural and popular vacationing spot. Several fine beaches, riding stables, and one of California's finest 18-hole golf courses were easily accessible. There was a swimming pool, a tennis court originally on the property and to those were added basketball courts, shuffleboard courts, horse-shoe pitching grounds, and a baseball and football field.

The construction of the camp, remodeling of the Army buildings, landscaping and gardening was performed to the extent of about 90% by convalescent patients. This work was proved to be an excellent rehabilitation project. Hobby shops, occupational shops, and a large vegetable garden and chicken farm were established and maintained throughout the period of occupation. During the war, approximately 1,400 Navy and Marine and Coast Guard officers and more than 1,600 enlisted patients were rehabilitated at this hospital annex. Vocational guidance and hobby facilities were available at all times and in many instances prescribed as a therapeutic measure.

An attempt was made to get away from a hospital atmosphere as far as possible. Commissary supplies, maintenance equipment and supplies were provided through the property and accounting office of the hospital. It was believed that this activity was operated much more economically than it would have been had a ponderous and expensive Navy convalescent hospital been organized in its stead.

During World War II, the commissary department maintained 12 independently-operated subsistence facilities. At the height of the war more than 19,000 people were being subsisted.

At the beginning of the war, the hospital ships' service had an average gross business of \$20,000 a month. By December 1944, this had increased to \$298,000. The ships' service department operated 6 stores, 6 barbershops, 5 cafes and fountains, 2 beauty shops, a gasoline station, a carpenter shop, 3 laundry and dry cleaning stations, 2 tailor shops, a telegraph service office, and a station-wide soft drink and newspaper service on the compound.

SAN FRANCISCO, CALIF.

This hospital, properly known as the Naval Receiving Hospital, was located at Geneva Avenue and Moscow Street in San Francisco. It was a hospital constructed for temporary use and originally assembled with the designation, Mobile Hospital No. 13. The original assembly of personnel began in the fall of 1943, at the Medical Supply Depot, Brooklyn, N.Y. CAPT R. R. Gasser, MC, USN, was the prospective commanding officer. The original complement of the hospital was 55 officers and 594 enlisted men. Before much progress had been made in assembling personnel and equipment the designation was changed to Fleet Hospital No. 113 and on the relief of CAPT Gasser CAPT G. W. Smith, MC, USN, became the medical officer in command.

The fleet hospital was intended for assignment in an overseas location but before that assignment could be carried out there was a need for a hospital in the San Francisco area for the purpose of receiving casualties from the Pacific Theater. As a consequence, the designation was changed again from Fleet Hospital to Naval Receiving Hospital. Men and materials began to arrive at San Francisco in September 1944 and official commissioning ceremonies were conducted on 9 December 1944. The hospital was not ready to receive patients for another few weeks but the first patients were received on 24 December 1944. The principal function of the hospital was to meet incoming transports carrying casualties from the war zones, transporting them to the receiving hospital for examination and further distribution, principally by train to various naval hospitals in the United States nearest the homes of the respective patients for further treatment and/or convalescence.

During most of 1945, until after VJ day the hospital received an average of more than 1,000 patients a week. None were retained in the receiving hospital for extended periods with the exception of ambulatory patients not requiring definitive medical attention or those who lived in the San Francisco area. Many of these were admitted to the hospital for record purposes but subsisted in their respective homes. Hospital corpsmen from the receiving hospital generally accompanied the drafts of patients on trains and many of these hospital corpsmen logged thousand of miles of train travel during 1945.

Having served its purpose well, the hospital was decommissioned on 15 December 1945. During its existence, the hospital staff developed most amicable relations with the community of San Francisco.

First Naval Hosp. San Juan, P.R.

Following the occupation of the island by the United States, the hospital was for a time located at the naval station. In 1903 buildings formerly known as the "Army Corral" located on elevated ground outside the city were turned over to the Navy for hospital purposes. Three small one-story buildings, a kitchen, a mess room, an operating room, and a detached lavatory were erected. In 1905 the hospital was increased by the transfer from the Bureau of Equipment of three small buildings formerly used as a wireless station. The capacity was 30 beds. Upon closure of the Navy Yard at San Juan on June 10, 1911, the hospital was placed out of commission and transferred to the insular government.

SAN JUAN, P.R.

The Naval Hospital, San Juan, Puerto Rico, was built on a tract of 19.8 acres adjacent the San Patricio Housing Project, about five miles from San Juan. This 200-bed hospital was built with concrete exterior walls of one-story height and coregated iron roofs supported on wood girders.

The hospital was established by the Secretary of the Navy on 8 September 1943 and was commissioned on 1 December 1943 with CAPT H. D. Hubbard, MC, USN, in command. The hospital was placed in caretaker status on 3 September 1946. The Federal Board of Hospitalization Resolution, approved by the President 13 August 1946, transferred the hospital to the Veterans Administration on a revocable permit. The hospital was disestablished on 1 September 1946 and transferred as of that date to the Veterans Administration. Construction of the hospital cost \$438,800.00.

First patients were received on 3 December 1943.

The hospital was known as Navy 116, FPO, New York. The hospital was within the boundaries of the 10th Naval District and the commissioning ceremonies were attended by VADM A. B. Cook, commandant of the 10th Naval District. The Executive Officer of the hospital was CDR P. H. Bitner, MC, USN. The original staff consisted of 10 other medical officers, 5 Hospital Corps officers, a supply officer, a chaplain, 14 nurses, and 46 hospital corpsmen. Designed as a 200-bed hospital the peak load of patients was reached in April 1944 when 210 were on board. From this period on there was a gradual reduction in the number of patients until July 1945 when the daily average patient census was about 41. In the 3 years of the hospital's existence there were 3,542

admissions. Of these 95 were Veterans Bureau patients.

The admissions of Veterans Bureau patients presented problems, the greatest of which was a language difficulty, for the majority of the veterans were Puerto Ricans and most spoke only Spanish. With the assignment of 3 medical officers who were natives of Puerto Rico this situation improved.

SANTA CRUZ, CALIF.

The U.S. Naval Special Hospital, Santa Cruz, Calif., was commissioned on 8 March 1943. CAPT Frederick E. Porter, MC, USN, Retired, was the first commanding officer. The hospital was established in the spacious Hotel Casa Del Rey and first designated as a U.S. Navy Convalescent Hospital.

The first patients were received on 10 March 1943. On 1 May 1943 the Casa Del Rey Apartments were leased from the Seaside Company providing 226 additional beds, for a total of 936. These additional rooms were designated as U.S. Naval Special Hospital, Annex No. 1. On 25 October 1943, the Rose Arbor Apartments were leased from Miss Lulu Miles for use as a Waves Hospital Corps quarters. Various other buildings, including garages and work shops in the vicinity of the hotel were leased during the course of the war to provide additional spaces for the hospital. On 28 June 1945 the hospital was redesignated as a special hospital.

On 15 March 1946, transfer of patients to this hospital were discontinued. In accordance with SECNAV letter of 14 December 1945 disestablishment of the special hospital began on 1 April 1946 and was completed on 1 July the same year. CAPT Frederick E. Porter, MC, USN, Retired, was the only commanding officer during the hospital existence.

The main building, located on Beach and Cliff Streets and formerly known as the Casa Del Rey hotel, was the first hospital building occupied. The hotel was built in 1912 as the first modern hotel in Santa Cruz. For the 10 years prior to the leasing of the hotel by the Navy from the Seaside Company, the hotel had been operated as a beach hotel and nightclub by the Troyer Brothers.

After commissioning, the first group of patients, received 10 March 1943, consisted of 26 officers and 38 enlisted men from the Naval Hospital, Oakland, Calif. During the next 2 days, 161 additional patients were received from naval hospitals in the San Francisco Bay area. From then on and as alterations and additional spaces were acquired the number of patients gradually increased, more being received than discharged until a maximum of 660 patients were on board at one time. This number of patients and the 15 hospital corpsmen on the staff filled almost all of the available beds.

One of the distinctive features in the organization of a hospital of this type was the arrangement providing for maintenance operation and upkeep by civilian contract managers. The contract for this service has been negotiated with the Troyer Brothers hotel managers who successfully operated the Casa Del Rey hotel prior to the Navy occupation of the property. The contract was let on an annual basis and provided for the furnishing of all food and its preparation in accordance with standards Navy hospital menus, with service in cafeteria style of all meals at hours fixed by the medical officer in command.

The contract provided that all expenses, including salaries of all personnel required in connection with the operating of the hotel promises, except office expenses and Government staff, including the cost of food, laundry services, cleaning and renovation, bedding, carpets, draperies, linen replacements, repairs to furniture and fixtures, and miscellaneous housekeeping expenses and cost of all utilities were included in the contract. The contract also included the maintenance of the premises and grounds at all times, to maintain and replace all perishable equipment, to test and inspect all utilities, to operate the property

premises solely for the benefit of the Government and to maintain all mechanical, electrical, sanitary and fire-fighting equipment in a reasonable and unsable condition at all times. The commanding officer, at the time of disestablishment, reported that after 36 months experience with this contract arrangement it had proved to be a most satisfactory and economical method of operation.

Among the recreational facilities at the hospital were golf, horseback riding, bowling alleys, a warm salt water plunge, deep-sea fishing, trips to the countryside, 2 basketball courts, an 18-hole miniature golf course, horseshoe pitching, handball courts, a softball diamong, croquet courts, a complete gymnasium and a motion picture theater. The executive officer was CDR James B. Vail, MC, USNR.

Between the date of commissioning and 1 December 1945, 18,263 patients were admitted to the hospita; of these 9,941 were returned to duty or transferred to other hospitals and 8,322 were discharged from the Service. This volume of work was carried on by a staff of medical officers averaging 5, assisted by an average of 50 hospital corpsmen. The commanding officer reported that the convalescence of patients at this hospital seemed to be remarkably prompt, probably owing to the administration of concentrated vitamin therapy, the prompt correction of anemias and not the least to the palatability and variety of food served in the mess. Great credit to the excellence of the mess was owing to the efforts of the civilian management, their chef and staff--a rather unique but very effective arrangement.

The largest group of patients dealt with was those with psychoneuroses, of whom a total of 3,421 were treated. More than half of these were

admitted during 1944. Allied and similar groups, including combat fatigue, operational fatigue and other NP conditions totaled 2,120 patients and also were received in a great numbers during 1944. This large group of NP patients totaling more than 6,000 was materially benefited by various forms of special therapy including individual psychotherapy, relaxation therapy and occupational therapy. The patients within this group were returned to duty or released to civilian life in a considerably improved condition.

The rehabilitation program was considered to have been quite effective for several reasons the most important of which was the fact that every patient had been required to participate in suitable phases of a well-organized program. The ideal climatic conditions together with an abundance and variety of natural recreational facilities available in the immediate area made possible the consummation of an ideal program that was practical, satisfying, efficient and conducive to rapid recovery. The greatest disappointment expressed by the commanding officer in his final report was that a high percentage of patients and personnel showed a lack of interest in the educational services division.

SEA GATE, N.Y.

The U.S. Naval Special Hospital, Sea Gate, Brooklyn, N.Y. occupied the Half Moon Hotel located on the Boardwalk at Coney Island, in Brooklyn, N.Y. The original staff of officers and enlisted men arrived in the hotel between 19 July and 30 August 1944. They immediately began converting the hotel for use as a hospital and soon accomplished redecoration, alteration and repairs. On 30 August 1944, the hospital was commissioned as the U.S. Naval Convalescent Hospital, Sea Gate. CAPT E. P. Huff, MC, USN, was the first medical officer in command. There were 17 medical officers, 8 nurses, 52 enlisted men, and 200 guests assembled on the sun deck of the hospital to witness the commissioning ceremonies.

The first patients were received on 4 October 1944. By June 1945, 2,500 patients had been received. On 1 July 1945 the designation of the hospital was changed to naval special hospital. The principal mission of this hospital was to rehabilitate patients and to prepare them to return to civilian life. Insofar as possible, the type of patients received was limited to ambulatory ones.

Rehabilitation, occupational and physical therapy as well as emphasis on educational services were concentrated in this special hospital.

During the period that this hospital was in commission more than 4,800 patients were admitted. The hospital was decommissioned on 15 June 1946.

SEATTLE, WASH.

The Naval Hospital, Seattle, was commissioned on 22 August 1942. Originally planned as a 1,000-bed hospital, an expansion program was begun almost immediately and within the first year 500 additional beds were provided. With later installation of double deck bunks the hospital reached a bed capacity of 2,600 by the end of 1944.

When commissioned, the first commanding officer was CAPT Franklin F. Murdoch, MC, USN.

The Naval Hospital, Seattle, was located on a square plot of land containing 165 acres leased from the State of Washington. The southwest corner of the plot of land was at 150th Street and 15th Avenue, N.E., 15th Avenue being one of the main highways extending north from the University district of Seattle. The hospital was approximately 4 miles north of Seattle city limits, 10 miles from the Naval Station, Seattle, 5 miles from the Naval Air Station, Sand Point, and 10 miles from the 13th Naval District Headquarters in downtown Seattle. There were no thickly populated areas in close proximity to the hospital. An 8-foot coil wire fence with 3 top strands of barbed wire, surrounded the hospital grounds.

The area surrounding the hospital was rolling and hilly and the portion of the hospital complex where the main buildings were located were covered with a dense second-growth pine and fir trees. The surface soil consisted of a mixture of clay and sand in various proportions. A hardpan stratum of clay, almost impervious to water, was near the surface. In grading for the hospital a large area of this stratum was exposed, particularly in the ward section of the grounds and this

produced a difficult drainage problem during the wet months.

The graded area near the hospital buildings were covered with five inches of rich top soil. During the dry weather this soil pulverized into a very fine dust, which when disturbed, suspended in the air as a cloud. The admixture of peat in the soil made ground fires easy to start and constituted a considerable fire hazard in the early days of the hospital. This danger was greatly reduced by extensive seeding. Grass stayed green during the winter and was kept well watered in the dry summer months.

The buildings were of one-story frame construction on cement piers with California siding, plywood inside walls and paper roofs. The decks were of wood except in washrooms, heads, utility rooms, and examining rooms where they were constructed of concrete. All ward buildings, sick officers quarters and hospital buildings were connected by a closed, steam-heated passageway 8 feet wide. The buildings were intended for temporary use, only until the end of the war emergency.

A serious fire occurred on 10 May 1944. The fire broke out in the rear of Ward 28 and spread swiftly through the other wards. Owing to the prompt action of the fire-fighting force and hospital personnel, the fire was contained and rapidly brought under control. The alarm was sounded at 2220, the Naval Air Station was notified and stood by available for assistance if required. The plasterboard overheads, only recently installed, materially aided in limiting the spread of the fire. The sewage disposal system was inadequately constructed and caused many blockages on several occasions.

In the first few months of the hospital's operation, most of the patients received for overseas came from Alaska. Nine days after the beginning of 1943, however, and less than 5 months after its commissioning, the hospital received the first large draft of casualties from the South Pacific. The hospital maintained contact with civilian medical organizations in the Seattle area and in addition to the professional contacts the hospital enjoyed a most cordial relationship with the civilian community at large. Many gifts and services were provided by the city of Seattle and various organizations. These included the donation and cost of constructing an athletic field; the provision of a telephone fund which permitted free long distance calls for every patient returning from overseas, the provision of bedside radios and pillow-type headphones and an abundance of fresh flowers delivered twice a week to the hospital; frequent entertainment of high quality; and a wide variety of external recreational facilities made available to hospital patients. The traditional generosity of people of the Northwest was manifest in sustained intelligent effort to mobilize the resources of the community and place them at the disposal of the hospital.

The peak patient census was reached on 19 June 1945 when 2,647 patients were on board. In January 1947, when word was received that the hospital would be closed, the census had dropped to only 1,000 patients.

The hospital was placed in caretaker status and decommissioned on 1 April 1947.

SHOEMAKER, CALIF.

The Naval Hospital Shoemaker, Calif., was commissioned 1 October 1943, with CAPT R. P. Parsons, MC, USN as the commanding officer. The original bed capacity was 300. A year later, the capacity had been increased ten fold to 3,000 beds.

SPRINGFIELD, MASS.

This hospital was established by acquiring the property and facilities of the international YMCA college. The facilities had been used from March 1943 to May 1944 as a training detachment of the Army Air Corps. The Navy contracted to pay a monthly rental to the college and to retain the maintenance employees of the college to provide heat, light, upkeep and messing for staff and patients. Commissary supplies were obtained from the Army at the nearby Westover Air Field, from the Navy Supply Office, Boston and by local purchase. All other maintenance items not obtainable through regular Navy channels were purchased by the college contractor for which he was reimbursed by the Navy. The hospital was commissioned 8 September 1944 with CAPT J. F. Riordon as the first medical officer in command.

There were 450 beds available for ambulatory and convalescent enlisted personnel of the Navy. A large proportion of the patients admitted were those recovering from orthopedic conditions, mild neuroses and fatigue states. Physical therapy, athletic and recreational facilities were abundant. The nearness of the hospital to a friendly, patriotic City of Springfield offered hospitality and aid to the patients, demonstrating that the selection of this site for convalescent hospital was a wise one.

Between 22 September 1944 and 31 August 1945, there were 2,449 admissions to the hospital. Of these, 57% were discharged to duty, 31% were transferred to other hospitals and 12% were discharged by reason of medical survey. The highest patient load occurred on 9 August

1945 when 463 patients were on board. This convalescent hospital, the name of which was changed on 1 July 1945 to special hospital, concentrated on rehabilitation measures. Its nearness to the Army Station Hospital, Westover Field, and to the Springfield Hospital precluded the need for elaborate general hospital services. Whenever emergencies occurred these two hospitals were very cooperative in providing services and facilities not immediately available at the special hospital.

^P
STRATHTEFFER, SCOTLAND

This hospital, known as Navy Base No. 2, was organized at Stanford University with Dr. Stanley Stillman as director of the unit and Dr. A. W. Hewett as his assistant. This unit originally was enrolled in the Red Cross early in 1917 and subsequently enrolled in the Navy during July and August of 1917. After organization and training in Philadelphia, the Unit sailed for Liverpool, 20 January 1918. CAPT E. S. Bogert, MC, USN was placed in command with CDR C. G. Smith, MC, USN, as executive officer.

The hospital originally was intended to provide service for the personnel of the Navy, but the concentration of allied vessels in combined military operations made it necessary that the needs of both American and British ships be supplied with medical attention. The location selected for the hospital was determined after consultation with the Medical Department of the British Admiralty and strategic needs pointed to the vicinity of Moray Firth. Strathteffer was selected as being in direct railway communication with the ports where ships operating in the North Sea could most conveniently land sick and wounded. A number of buildings commandeered by the British Government, under the Defense of the Realm Act, were carefully considered and finally those at Strathteffer were chosen as being situated in a well-watered valley where the climate was somewhat less severe than that generally prevalent and having ample suitable water and being readily convertible to the purposes of a hospital.

The four large buildings, originally hotels or hydrotherapeutic establishments, accommodated the needed surgical and medical wards, operating room, laboratory, X-ray room, the nursing force, the commissary department, and the articular services, which were necessary as the result of the remoteness from a large city. The adjacent grounds and those placed at the disposal of the hospital by the Countess of Gromarty afforded ample opportunity for out-of-door recreation at tennis, croquet, baseball, and football, while in the nearby buildings rented by the YMCA, educational religious and recreational undertakings were carried on with vigor. Professional service to patients was conducted by surgical, medical, orthopedic, hydropathic and neurologic divisions, each in charge of an expert in his specialty. During the calendar year 1918, the total admissions were 2,182. Of these, 777 were men of the United States Navy, 1,002 were men of the British Navy and 402 of the British Army. Of this total, 1,288 patients came to the hospital by means of British Army or Navy submarine trains. The total number of surgical operations was 946. The hospital remained in commission until 1919, when it was turned back to British authorities.

SUN VALLEY, KETCHUM, IDAHO

The Navy Convalescent Hospital, Sun Valley, was commissioned on 1 July 1943 with CAPT J. T. O'Connell, MC, USN, in command. The title was changed on 1 July 1945 to naval special hospital.

The Sun Valley facility was originally a hotel owned by the Union Pacific Railroad, being ideal as a convalescent center. The bed capacity, when taken over by the Navy, was about 1,400.

A special problem was always present at the Sun Valley hospital owing to its isolation. Transportation facilities were never good and liberty towns were comparatively small and distant. The small towns of Ketchum and Hailey were inadequate to furnish proper diversions for liberty parties. Liberty parties were sometimes formed to travel to Twin Falls, Idaho which was 98 miles distant and Boise, Idaho, 185 miles from the hospital. These liberty parties were accomplished by special arrangement with local civilian transportation officials. As a result of isolation, every effort was made to furnish as many sports activities as possible on station. These included ice skating, carnivals, swimming, and ski meets which were held on the grounds to partially compensate for the lack of off-station diversion.

SYRACUSE, SICILY

The Naval Hospital, Syracuse, Sicily, has been claimed as the first United States Navy hospital. This claim can be partially denied by similar claimants who may prefer to give the title as first to more or less makeshift quarters used for the treatment of Navy sick and injured and which were located at various Navy Yards, notably those in Boston, Brooklyn, Philadelphia, Washington, Norfolk or Pensacola.

Since early documents and correspondence, both private and official, frequently refer to naval hospitals from as early as 1798 there is no denying that some sort of hospital facilities did exist in various shore stations. The Naval Hospital at Syracuse, however, was established in 1804 in obedience to orders given by SECNAV to Surgeon Edward Cutbush so that medical support could be provided to the Mediterranean Fleet then engaged in trying to suppress piracy by North African States, including Tripoli.

Syracuse was the chief Greek city of ancient Sicily; it was one of the earliest Greek settlements on the Island of Sicily. Syracuse was founded about 734 B.C. as an outpost in the Greek expansion of the era. In modern times, Syracuse has been an important seaport.

The North African pirates, known variously as the Barbary Pirates and the Tripolitan pirates, began major piratical operations in the 16th century; these raids upon Mediterranean shipping came to its greatest height in the 17th century; it declined somewhat in the 18th and finally they were extinguished in the early 19th century.

From 1659 onward, the coast cities of Algeria and Tunisia--although a part of the Turkish empire--were in fact anarchial military republics which chose their own rulers and lived primarily by plunder. Pashas--often known as Deys or Beys--received 10% of the plunder acquired by pirate interests. Prisoners were taken in large numbers; the rich were ransomed but the poor were reduced to slavery. The piracy ended by the French conquest of Algiers in 1829.

Prior to the Revolutionary War, the British Fleet had provided some protection to colonial shipping in the Mediterranean. With the Independence of the United States, however, it was necessary for the infant nation to assume responsibility for its own ships. Following a custom established a century or more before, the United States paid hundreds of thousands of dollars tribute to the pirates for protection of United States shipping between the end of the Revolutionary War and 1801. In 1801, Tripoli demanded an increase in the annual tribute. This demand was refused and a Navy force was sent to blockade Tripoli and protect our shipping.

When Dr. Cutbush arrived in Syracuse, the principal base for the Navy Mediterranean Fleet, he negotiated with a Count Landolina who furnished, apparently at no cost, one of his villas for use as a Navy hospital. Apparently this building was occupied sometime in October 1804 and continued in use as a naval hospital until December 1806. On 11 December 1806, the hospital was passed into the control of the British Navy who evidently used the building for the same purpose.

Information recently extracted from the Archivio Storico Della Sicilia orientale, on pages 95 to 100 contain the following notes:

"Page 95: Don Saverio Landolina-Nava was born in Catania, Sicily on 15 February 1743, descendant of a long line of other famous persons in addition too the cavalier of Malta Fra Giovanna Antonio Landonina, who heroically died in combat for the faith during the great siege of Malta while defending the Borgo S. Michelle on 15 July 1565.

"Pages 95-96: Don Saverio Landolina-Nava was passionately fond of Plinio and other classical literary works. Also, he established the Papyrus on the banks of Anapo River (in Syracuse) as the same plant for the manufacture of paper millennial years ago grown at the Valley of the Nile; so that Landolina was the first one who created and brought to perfection that type of industry.

"Page 97: The greatest recognition of his merits was given to him by the Royal Borbonic Government, when after the death of Gianfranco Biscari, Landolina was nominated on 11 April 1803 by royal dispatch from King Ferdinando Di Borbone Da Napoli as the Royal Custodian of the Antiquity for the Val Demone and the Val di Noto.

"Pages 98-99: He was the Cavalier of Devotion of the Order of Malta, Patrician Senator on 12 June 1804, Superintendent of the Royal Prints on 29 December 1808, Captain of Justice on 13 November 1809, in Syracuse, and then historian, naturalist, philosopher, philologist and inspired classic poetry.

"Page 100: Saverio Landolina was also appreciated and loved for the great lordly hospitality he offered always keeping open his home to all Italians and foreigners visiting Syracuse. He buried at his Villa di Acrodino, the remains of foreign heterodoxy people who couldn't be buried in the churches and who were worth an honorable burial. In fact, from 1806 on, many heroic American and English officers were buried in the park of his Villa. Mario Landolina was Saverio Landolina's son. He was born in 1760, inherited all of his fathers property and possessions in 1814, and died in 1853."

The building used as a naval hospital was at least two stories and perhaps three stories high containing between six and ten rooms. It was approximately 90 feet long and 50 feet wide. As are most of the structures, past and present, on the Island of Sicily the building was constructed of stone throughout. The original building is still in use in 1971 being a quarters for nuns attached to the church known as the St. Filippo Neri Church.

TREASURE ISLAND, SAN FRANCISCO, CALIF.

The Naval Hospital, Treasure Island was commissioned 4 April 1942. CAPT E. E. Curtis, MC, USN, Retired, was the first medical officer in command. Patients were not admitted until 15 July 1944 when construction had progressed far enough to provide facilities for the treatment of the sick.

The hospital facilities were in full commission by December 1942 and there were 550 patients in the hospital.

The hospital was established as a general hospital with a 500-bed capacity, it soon became apparent, however, that 500 beds was inadequate and expansion continued during World War II. There were 10,926 patients admitted during 1943.

In 1944, there were 17,702 patients admitted. It soon became apparent that the maximum expansion possibilities for the hospital would not be sufficient for the adequate care for the patients received. Therefore, a rapid turnover of patients became necessary and those who would require long convalescence were transferred to other hospitals.

TAKU, CHINA

On 16 June 1900, the Monocacy was moored above the railroad station at Tongku about a mile and a half from the Taku fort. Shortly after noon on the 17th these fleets opened fire on boats in the river. In the river, in addition to the Manacee were Japanese, French, Russian, English and German gunboats. All of the gunboats were of comparatively light draft ranging from between 1,000 and 1,800 tons displacement and most were lightly armed. There were several merchant steamers at the coal wharfs but they were well protected by the great stacks of coal lying between them and forts. The Russian ships were most remote from the fort and were tolerably well protected.

In addition to the gunboats, the Allies had about 900 men on shore who had been landed on the morning and the evening of the 16th. Of these, 300 Japanese were at Taku in camp near the Monocacy. The rest, for the most part, English and German were in a camp just above the first bend of the river and about three quarters of a mile from the northwest fort. It was stated that the Chinese did not notify the noncombatants before beginning the action. As soon as the Chinese opened fire, the Japanese considered that they had been attacked and immediately took part in the engagement.

The fleet in the river returned the fire vigorously with no apparent effects on the fort for the next 4 hours. When the land force attempted to take the northwest fort it was repulsed and retreated to the protection of the river banks and salt flat about a quarter of a mile to the rear. The fire was continued for another 3 hours for a total of about 7 hours of active shelling. The losses of the Chinese were very light, not more than 100 killed, and there were relatively few wounded found. The Allies

lost 108 killed and 123 wounded. Several of the Allied ships were struck several times but none was hurt seriously. The Monocacy was hulled with an 8-inch shell which passed through the main deck. Several men were struck by splinters but none was hurt seriously.

Following the engagement, about 2000, the wounded began to come in and owing to many refugees and large quantities of stores the deck was overcrowded. Surgeon C. J. Decker, the medical officer of Monocacy, reported that during the next 60 hours he operated on 18 Japanese, 23 Russians, and 16 Chinese. After the first 5 hours, the patients were taken away immediately after operation. In some of the minor cases among the Russians and Chinese no anesthetic was given because of a limited quantity on hand at that time. In this connection it is interesting to confirm the stories of these people. Extensive shell wounds were cleaned, parts retrenched, bones cut and extensive stitching done; finger and toe amputations endured without a murmur. In the case of one Chinese, I amputated the fourth and fifth metacarpal bones and the middle finger. The hand was considerably lacerated by a shell fragment. After the wound was sewn and dressing applied, I asked the man if I could do anything else for him. He said he would like to eat. We gave him considerable quantity of food which he devoured and then thanking us, he joined his company for duty.

Sporadic fighting continued for the next few days and the Medical Department was kept constantly busy. On 29 June, the First Battalion of Marines, with some 300 men, in company with 500 Russians got as far as Chen Li Ang Chen half way to Tientsin where they joined a party of Russians holding a beach camp. On 30 July, an advance on Tientsin was

made by a force but was driven back by the enemy and we lost three killed and three wounded. Anticipating that we would have wounded I had suggested to the commanding officer the advisability of establishing a base hospital in one of the larger buildings at Taku within easy distance of the ship and railroad. This he approved and ordered me to put the matter before the admiral at once. I went out to the flag ship, Newark, and was directed by the admiral to open up a hospital in Taku in the building that had been turned over to him by the Imperial Japanese Customs. This building although it was $4\frac{1}{2}$ miles from the railroad station at Taku and difficult to access was considered by him less liable to attack by the Chinese forces.

I was verbally ordered to take possession of the house mentioned which was unfurnished and to furnish it for use as a hospital with materials from the empty adjacent houses giving receipt for the same when necessary. In the matter of expenses the hospital was to be considered as a part of the Medical Department of the Monocacy. This view was followed and hope will it meet the approval of the Bureau. After receiving these instructions, I returned the Monocacy and began immediately the collection of drugs, dressings and other necessary equipment. Owing to the fact that the Monocacy had been in commission for many years there are many things on hand in the way of dispensary furnishings that were very useful. There were four mattresses and four pairs of blankets available. In a godown at Taku that was being looted I found some cases containing bedsprings and wicker chairs.

These I took together with a quantity of rice and other provisions. The Newark furnished me with 16 mattresses and 24 blankets on requisition and lent me 50 hammock mattresses. Six fine leather-covered chairs were also furnished but these I sent to the Navy storehouse at Taku as being of too much value to be used under the circumstances except in case of emergency. The Newark also sent surgical and medical supplies, prepared foods and many other articles of great use. The Yorktown sent in brandy, ether and a generous assortment of useful articles. After the arrival of the Brooklyn the hospital was amply furnished with everything.

The first patients were received in this hospital on 21 July, at about 2300, when three wounded came down by rail from the action near Tientsin. I came on board and treated them temporarily. At daylight on the 22nd all hands turned to and loaded the hospital outfit onto launches and sampans and with a squad of marines and sailors I went down to Taku; took the house as directed and commandeered the many things necessary to make it habitable. By noon everything was shipshape and we were ready for business. By 1400 the three wounded marines were in the wards and along with one wounded Chinese. If necessary, 50 patients could have been taken in. In fact, the only reasonable limit to our capacity was the kitchen. By great good fortune we found in the house adjoining a well equipped kitchen with table sittings and this we used until the hospital was closed. The staff at the hospital besides myself consisted of one hospital apprentice, from the Monocacy, a Japanese named Yamatee, a most excellent and reliable man, a hospital apprentice from the Newark, two marines from the Monocacy, a guard, two wardroom boys from the Monocacy, two coolies, and a Chinese

cook. There was a good deal of labor required in running the hospital because of the distance from the Monocacy and the great difficulty in procuring means of transportation for supplies and wounded. At times our water supply from the ship failed but CAPT Warrender, the English flag captain, kindly relieved us of great embarrassment by giving one barrel per day from their distilling plant at Taku. Fortunately for the comfort of everyone, there was plenty of ice near at hand and we were able to get a small supply of eggs, fresh meat and a little milk. After the arrival of the Brooklyn the hospital apprentice from the Newark was sent to his ship and one from the Brooklyn was taken on.

The subsistence for the patients and attendants was secured by taking the ration of each man from the ship and then making up the deficiencies by making purchases from the stock of some Chinese providers. Small purchases were also made from a firm in Nagasaka. The hospital was opened on 22 June and closed on 25 July. There were 417 sick days noted on the medical journal. These with the ten attendant's 330 rations make 747 rations supplied.

On 24 June, the Surgeon in charge of the English hospital fell ill with scarlet fever and they had no one to take his place immediately; I took charge for him. There were a number of patients needing operations and I performed them at once with, I am glad to say, good results. After 4 days, I was relieved by a staff surgeon from Wei Hei Wei, accompanied by two civilian assistants. During this time, there were in the English hospital two cases of scarletina, one of typhoid and 24 wounded. Within a week RADM Bruce with his entire staff paid a visit to the hospital to thank us for our work for them and later made an official report of the matter to Admiral Remey. The succeeding week, Admiral Seymour and staff

called and expressed appreciation for our aid. As our hospital was the only one equipped with an operating table, it was frequently called into use by the English, Germans, and Russians. In all such instances I gave all the assistance I could both in aid and materials.

It is pleasing to note that these slight services were promptly recognized by the various commanding officers. The Germans who occupied the south forts suffered severely from mine explosions and a number of wounded were brought into our hospital for operation and subsequent treatment. One of these men died on the table from shock after amputations of leg and thighs the lower parts of each having been horribly mangled. Of the patients admitted, 30 were suffering from gunshot wounds. Three of these were about to be in extremis when admitted; one patient died. Three would probably be invalided from Service and one of these from a rapidly growing goiter. The hospital was closed on 24 July since a base hospital had been established at Tientsin. Bills were therefore all paid. Several articles taken from the adjoining houses returned and the hospital stores and supplies sent back to the Monocacy. The greater part of the stores were transferred at once to the hospital at Tientsin. Eleven patients were transferred to the Solace and one sent to duty.

TRINIDAD, BRITISH WEST INDIES

The Naval Hospital, Trinidad, was situated on the upper portion of Tucker Valley in the Naval Operating Base, occupying a reservation of about 51 acres. The hospital was originally planned for a capacity of 150 beds, but during 1943 was expanded to 300 beds. The hospital was placed in commission on 12 August 1943 with CAPT W. J. Pennell, MC, USN, in command and was placed in maintenance status on 23 August 1945. The Naval Operating Base, Trinidad was part of the territory given to the United States by Great Britain on a 99-year lease in return for American lend lease aid. The Naval Operating Base and Naval Air Station on Trinidad were established to provide support for forces needed to protect the Panama Canal against a possible attack. When placed in maintenance status in August 1945, the hospital facility was redesignated as a dispensary in support of the Naval Air Station.

The hospital buildings were of wood construction with asbestos siding. The one-story structures were arranged on either side of a central corridor. No married officers quarters were erected and the living accommodations consisted of a bachelor officers quarters, nurses quarters and quarters for enlisted men. The cost of construction of the hospital was \$1,707,524. The annual maintenance cost of the hospital was estimated at about \$50,000. The highest census of patients reached during World War II was 283.

WASHINGTON, D.C.

The history of naval hospitals in the District of Columbia embraces several phases and is related to several distinct and different locations. There is a logical assumption that hospital facilities of sorts was provided in the Washington Navy Yard shortly after 1800, when the District of Columbia was occupied as a seat of government.

It is known that a small building "near the Navy Yard" was rented in 1811 for some 200 dollars per year and utilized as a hospital. It is probable that this building had been a private home and it is also likely that the building was in the vicinity of 8th and M St. S.E. Probably this building did not provide accommodation for more than a dozen patients at a time.

As far as can be determined this building or another in the vicinity was the sole naval hospital in the Washington area for the next 30-odd years. Of course, hospitals in that period were not elaborate and so there was little point in transferring patients from other activities to the naval hospital since no better facilities were available in the hospital than on the parent station.

In any event, it appeared that these first quarters were abandoned about 1843, at which time Medical Department spaces within the confines of the Marine barracks were designated as a naval hospital. The Marine Barracks were then, and still are, located at 8th and I Street, S.E., only three city blocks from the Navy Yard. Exactly what the nature of

these accommodations were is not now known; however, when the Civil War taxed these facilities, an arrangement was made whereby a portion of the Government Hospital for the Insane (St. Elizabeth's Hospital) was set aside as an annex and utilized as a naval hospital.

These wards in the St. Elizabeth's Hospital as well as the facilities at the Marine Barracks were continued in use throughout the Civil War. In the 5 years at St. Elizabeth's, some 1,488 patients had been treated with a recorded death rate of 31.6 per thousand.

The increasing importance of the Navy Yard, combined with an increase in the number of naval vessels in the Potomac, required more suitable quarters. Congress, on 14 March 1864, appropriated \$25,000 for the construction of a new building for use as a naval hospital. Additional appropriations of about \$90,000 were needed before the hospital was finished. The building was completed in July 1866 and commissioned on 1 October of that year.

The new hospital was located on three quarters of an acre of land situated between Ninth and Tenth Streets on Pennsylvania Avenue, S.E. About half of the plot had been purchased on 4 June 1821 and the remainder on 30 March 1865 at a total cost of \$7,819.50.

This hospital was erected in the approximate center of the grounds facing south and was 90 by 60 feet. It was so constructed that the ground plan resembled a cross with short arms. Built of brick, it included a basement, two stories and an attic under a mansard roof. The rooms and wards opened on corridors with a central hall 10 feet wide, connecting rear and front, being crossed perpendicularly by a narrower corridor extending the length of the midline.

Despite the poor planning of the building, ventilation was remarkably good. The large number of windows, a walled duct under the hospital communicating at each end with the outside air and discharging into stack containing the steam pipes and the ventilators throughout the building near floors and ceilings, accomplished excellent results. This hospital was located only a few hundred yards from the Marine Barracks and the Navy Yard so that it was conveniently located to the activities which it supported medically.

Water was obtained from the city of Washington; to provide for possible insufficient pressure, however, a steam pump was provided to force the water into two iron tanks placed in the attic. All water used in the hospital passed first through a filter to free it from suspended matter. The building was heated by steam supplied from a boiler in the basement. It was at first lighted by gas, but electric lights were installed in 1893.

The hospital was designed to accommodate 50 patients. In 1871, there were 63 patients under treatment at one time. The hospital was abandoned in 1906 as a hospital when the new hospital was nearly completed at 23rd & E Streets, N.W. The building was used from 1907 to 1911 as a Hospital Corps School of Instruction, from which 20 classes, averaging about 30 students each, were graduated.

In 1903, Congress authorized \$125,000 for the construction of the new hospital, power plant and laundry in the new location at 23rd & E Streets, N.W. The plans for the hospital were prepared by the architect, Ernest Flagg, of New York and construction was started in 1904. The approved sum was found to be insufficient, and in 1905 an additional

\$20,000 was appropriated so that work could be continued. The hospital was placed in partial commission on 1 October 1906, although it was incomplete.

The sick officers quarters, the contagious building, the quarters for nurses and the quarters for hospital corpsmen and three houses for medical officers were constructed later at a cost of more than \$333,000. This cost included outside work such as grading, road making, building of conduits and laying of walkways. This expense was defrayed from the Naval Hospital Fund. The total cost, in 1905, of construction up to that time was placed at \$543,388 and considerable work still remained to complete it. The cost per bed of the main hospital was placed at \$2,935 and that of the sick officers quarters at \$1,792.

The main hospital building was near the center of the grounds facing north and the medical school. The houses for the medical officer in command and for one junior medical officer, the sick officers quarters and those for the hospital corpsmen occupied the eastern boundary of the reservation from north to south. On the northwest part of the grounds was a junior medical officer's house and the nurses' home. To the rear of the main hospital was the contagious hospital and in the southwest corner was the power plant, steam laundry, stable and greenhouse. The buildings were all similar in construction and were practically fireproof. The building material was light buff vitreous brick, with structural steel frames, concrete floors and ceilings and slate roofs. The interior finish was plain, and in the newer construction,

all angles were covered. The floors were yellow Georgia pine laid on sleepers imbedded in cinder concrete.

The entire hospital facility was supplied with electric power and heat from a central plant. The buildings had independent hot water or steam heating systems and the radiators had automatic thermostats. The main hospital and the contagious-disease building had independent supply and exhaust systems of ventilation. Provision was made for cleaning the air supply either by gauze filters as in the main building, or by a water air washer as in the contagious disease building. The heating of the incoming air was accomplished when desired by passing it over heating stacks, the temperature being automatically controlled by a damper regulating the admission of the cold air through a bypass. The exhaust system was connected with motor-driven fans in the attics over the various spaces. The service rooms were connected with this latter system only.

The main hospital building consisted of a central three-story administration building with an operating pavilion in the rear and four one-story pavilion wards, one on either side of each of the above buildings, all having connecting solarium corridors. In the basement beneath the administration building, the space was utilized for a large and well appointed hydrotherapeutic room, an X-ray room, a dark room, the dispensary and medical storerooms. Beneath the operating pavilion were the main kitchen, pantry, refrigerating room, and mess rooms for patients and employees.

The basement under each ward had a machinery room containing the blower and heater, the serving and soiled linen rooms for the corresponding ward units. Also in the basement of the northwest ward was a suite of rooms for the outpatient clinics; in that of the southwest, mess rooms for the Hospital Corps; in the basement of the southeast ward, a garage, a disinfector and the mortuary and autopsy rooms. The basement beneath the various corridors were utilized for cellars and the storage of bags and hammocks and for other purposes.

A large porte-cochere protected the main entrance to the hospital on the north side of the first floor of the central building. Its roof afforded space for a sun porch for the patients on the second floor. From the entrance vestibule a hall led to the rear and laterally by corridors to the wards. On this floor were the offices of the medical officer in command, the executive surgeon, officer of the day and the record clerk; two rooms and a toilet for the medical officer and a telephone and orderly station. The second floor had 6 rooms for sick officers, a dining room and a pantry. On the third floor were rooms intended for the Hospital Corps. The operating department in the rear had anesthetizing and recovering rooms, a dressing room, an instrument room and preparation rooms. The operating room faced the south and in consequence was extremely hot in summer and the light was dazzling. The floors and wainscot were tiled, the walls finished in white enamel and the ceiling of pressed steel.

The four wards were similar in size--50 feet 8 inches by 15 feet--each had accommodations for 18 patients including 2 in the quiet room. The estimated air space was 1,613 cubic feet per patient the floor space being $107\frac{1}{2}$ square feet per bed. The wards were lighted having 26.25 square feet of glass per bed. The utility rooms were located on

each side of the entrance.

The sick officers quarters had a basement and three stories. The entrance to the SOQ was on the north side over which on a level with the third floor was a large portico supported by six pillars. Beneath this on the level with the second floor was a small protico immediately over the entrance. These porticos served as verandas for the corresponding floors. The first floor had an office, a reception room, library, a nurses and dressing room, diet kitchen and five rooms for patients. The second and third floors had 17 bedrooms and the usual service rooms. As a rule there was a bathroom between each two rooms. All floors had elevator service; on the second floor, two rooms had been utilized for an operating room and a dressing room.

The contagious disease hospital was planned to accommodate four types of this class of diseases. The entrance for patients was on the south side of the basement into the receiving room thence by elevator to all floors. The reamining space in the basement contained the disinfecting plant, main kitchen, serving rooms, a dormitory and mess rooms for the attendants, a mortuary, storerooms and machinery room. The arrangement of the two floors above was similar, each being bisected by wide corridor running north and south open at each end, permitting free circulation of air. The elevator shaft, entirely enclosed, ran through the center of these corridors. On either side of the south end of this corridor on each floor was a six-bed ward and in connection with each a kitchen with an independent dumb waiter to the basement and serving room, a toilet, a lavatory and two quiet rooms.

In addition to the four isolation units, there were 2 rooms for nurses, an office and suite of rooms for a resident medical officer. The diet kitchens were to be provided with steam tables and electric ranges. The toilets were tiled and the partitions were of gray Tennessee marble. Steam sterilizers were provided for the disinfection of utensils. The entrance of each ward from the open corridor was through a vestibule with a door on each end. This with the exhaust ventilation should have prevented infection from one unit to another. The capacity of this building was 30 beds.

The nurses quarters had a kitchen, storerooms and a bedroom for the attendants in the basement. On the first floor were the quarters and office for the head nurse, a reception room, a lecture room and a dining room. On the second and third floors were accommodations for 18 nurses.

The building for the hospital apprentices was $2\frac{1}{2}$ stories in height in addition to a basement. It had accommodations for 57 men, an office, a lecture room, a recreation room and mess rooms. The power plant consisted of three 90-horsepower boilers supplying all the hospital buildings. The water, steam and electric mains were transmitted through conduits. The total normal capacity of the hospital in 1912, was as follows: main hospital-78 beds; SOQ-22 beds; contagious disease hospital-30 beds; total-132 beds. It was capable of expansion to 175 beds, or, by utilizing the Hospital Corps quarters, to 240 beds.

The site of the hospital at 23rd & E Streets, N.W. was acquired by the Navy in the 1840's. On the site was constructed the original Naval Observatory. In 1893, the site became unsatisfactory for use as an observatory and a new one was built further out from mid city on Massachusetts Avenue. In 1894, the Medical Department acquired the old building and occupied it as the Navy Medical Museum. The site, at that time, consisted of about 25 acres of ground. Subsequently, 5 acres on the western side of the site were transferred to the Public Health Service.

In 1902, the function of the Navy Medical Museum was expanded to include a medical school. Both activities were housed in the observatory building with the addition of wings on either side of the original building. This building was used a school for postgraduate instruction of medical officers and for instruction in technical specialties of hospital corpsmen as well as for clinical laboratory examinations primarily in support of the naval hospital.

Between 1906 and 1912 the hospital buildings were constructed at a total cost of about \$625,000.00. During World War I, eight temporary buildings were erected at the south end of the hospital reservation at a cost of slightly more than \$401,000.00. These hospital and service buildings remained in continuous use together with the Navy Medical School until 1942, when the hospital facilities were transferred to the newly-constructed hospital in Bethesda, Md., some 10 miles from downtown Washington, D.C.

Until about the time of World War I, hospitals--including naval hospitals--had been built with an eye toward the provision of bed space and facilities for intensive nursing care. With the turn of the century and the development of the use of various diagnostic aids such as clinical laboratory examinations, X-ray examinations, electrocardiograph tracings and such, nearly every existing hospital was then obsolete. This obsolescence was particularly acute since no spaces existed for the housing of these ancillary services. The Naval Hospital, Washington, perhaps was more fortunate than most since the medical school existed on the same site as the hospital. Nonetheless expansion room was slight and shortly after the end of World War I, farsighted planners began to think in terms of acquiring a new, larger site for the construction of more modern facilities.

In the case of the Naval Hospital, Washington, with the use of the temporary buildings erected during World War I new construction was not too urgent excepting for the replacement of the temporary buildings. These buildings constituted a fire hazard and their appearance, because of their temporary construction nature, and on account of their proximity to the new Lincoln Memorial and the new Memorial Bridge had been the subject of complaints by the Fine Arts Commission which group had suggested that they be demolished. The location of these temporary buildings was disadvantageous to efficient and economic administration. The principal group of original buildings were located on Observatory Hill at an elevation of about 94 ft. above the Potomac River. The temporary buildings were situated at the foot of the hill only slightly above the level of the River on filled-in land. Patients

housed in the permanent buildings on the hill and who required physical therapy or occupational therapy were required to walk or to be motored down the hill to where those two activities were located. At the same time the patients housed in the temporary buildings at the foot of the hill who had to visit various clinics or other offices on the hill for consultation as well going to the mess hall at times found the climb inimical to their respective physical condition.

In the late 1920's and early 1930's the patient load of the hospital averaged some 400-plus patients. About half of these patients were housed in the temporary wooden buildings at the foot of the hill.

In the late 1920's when CAPT C. E. Riggs, MC, USN became commanding officer of the hospital, he began exploring the possibility of replacing the existing hospital buildings with a new structure. Preliminary plans were drawn up but no action was taken since approval for construction was required from the Congress. CAPT Riggs later, appointed Surgeon General of the Navy, continued his recommendations for replacement not only of the Washington hospital facilities but also at several other locations where temporary buildings constructed during World War I was considered to be inadequate, considered to be fire traps, considered to be more costly in providing maintenance than would be so if they were torn down and replaced by fireproof buildings. Still no progress was made and no action taken.

In January 1930, the Surgeon General appeared before the House Committee on Naval Affairs for the purpose of strongly urging this new construction. The Surgeon General proposed the construction of a 500-bed hospital approximately on the site then occupied by the old Naval Observatory and the administration building of the hospital. The

plans envisioned construction to be done in increments and to be accomplished without disturbing the patients then in the hospital until new spaces were ready to receive them. It was planned that the Navy Medical School and Hospital be combined in a single building 6 stories in height. Medical officers' quarters, nurses' quarters, Hospital Corps quarters, the contagious wards and the power house were to remain, since these buildings were in a satisfactory state of repair. No thought, at this time, was directed toward the moving to another location. It was estimated that the cost of the proposed construction would be somewhat more than \$3 million; a similar expenditure would be required for an urgently-needed replacement hospital at Philadelphia as well as new facilities in several other locations including Great Lakes, Ill. Total expenditures, over a three-or four-year period, certainly would have exceeded \$12 to 15 million.

At the time of Admiral Riggs' appearance before the House Committee, the Naval Hospital Fund was solvent only in the amount of slightly more than a million dollars. Since at that time, and previously, it had been customary for Congress to authorize construction only at the expense of the Hospital Fund, this series of proposals would have required additional appropriations. The Congressional Committee was not antagonistic toward the recommendations, and each member agreed that the temporary buildings at the various hospitals certainly needed replacement. They were disturbed, however, when the Surgeon General informed them that the 19 then-existing naval hospitals provided more than 7,000 beds for Navy personnel and less than 6,000 of these beds were occupied. More than half of the actually occupied beds were allocated to the Veterans Administration. The Committee noted that

some \$15 million had recently been allocated to the Veterans Administration for their own hospital construction and they could see little logic in providing these beds in naval hospitals for Veterans Bureau patients. It was pointed out that the Navy had more than adequate numbers of beds in permanent construction to take care of their own personnel.

The Surgeon General was in the middle. The Congress had authorized and directed that increasing numbers of Veterans Bureau patients be cared for in Army and Navy hospitals. Yet to care for these patients both the Army and Navy was required to utilize outdated, unsafe and temporary buildings for the purpose. Relatively little if any thought was directed toward possible expansion and the requirement to take care of additional active-duty personnel. No thought was directed toward the recently-passed legislation of caring for dependents of active duty personnel. In retrospect, the hearings were illogical. Of course the Congress was characteristically in a period where economy was paramount in the minds not only of the Congress but of the general population who were just then entering into the beginning of the big depression.

Attempts were made directed toward justification, by comparing the numbers of Medical Department personnel in the United States Navy with their counterparts in the British and Japanese Navies. Such comparisons were difficult to make since the missions and organization of the three Services were very different. For example, the Japanese Navy Medical

Department supported no Marine Corps, as did the United States Navy, and the British Navy Medical Department supported no air group as did the United States Navy.

Admiral Riggs made his points well and in general appeared to convince the members of the House Committee of the need for a new, modern hospital, yet the need for attention to economy precluded passage of authority to go ahead with construction. It had long been considered to be a logical plan by the Navy Medical Department to have available a minimum of 25% vacant beds so that in an emergency these beds would be available. Yet with this over all plan the sad truth was that several of the 19 then-existing naval hospitals were occupied to above rated capacity.

Admiral Riggs read into the record a summary of the conditions at the various naval hospitals as expressed by Medical Department inspectors.

An abstract of these reports:

"Washington, D.C.---This hospital is satisfactorily administered as far as existing, unsatisfactory conditions will permit; the professional work is of a very high grade but is handicapped for reasons stated in this report. The staff is active, cheerful and conscientious in performance of its duties; the relations with the Commandant and the Veterans Bureau are cordial and satisfactory; the hospital on the whole is clean but can be kept so only with difficulty; the commanding officer has and is making an effort to keep the buildings in a good state of repair; the interns are receiving good professional experience; the morale of the hospital is very good; the commissary department is inefficient and far from

satisfactory; the meals are good; the laundry and issue of linen is very unsatisfactory; the X-ray department is inferior and not satisfactory; hydrotherapy is inferior and not satisfactory; the neuropsychiatry department is inadequate; the eye, ear, nose and throat department is not satisfactory; the sick officers quarters are not adequate; the tuberculosis ward is inferior, makeshift and does not meet the requirements of standard hospitals for the treatment of these patients.

The administrative offices are not well coordinated, they are scattered and not well located; the pharmacy is badly located and is too inaccessible; all temporary buildings are regarded as serious fire traps yet the majority of the patients are necessarily housed in these buildings; all departments are seriously overtaxed by the expansion of the hospital to a bed capacity far greater than is provided in the permanent buildings, presenting physical problems of a serious and varied nature without any material change in the size of activities. The already overburdened units are heavily additionally overburdened by a large outpatient department."

The inspector noted that all of these disadvantages did not lessen the high spirit and zeal of the officers and enlisted men on duty there. He pointed out that the temporary buildings of frame stucco and felt roofs were delapidated and had deteriorated. The floors sagged and were uneven; in some instances, there was a difference of 6 to 12 inches in their level. His recommendation was that certain permanent and all temporary buildings be torn down as soon as possible and replaced by a modern structure.

The medical inspector further reported that the building then used as a Navy Medical School was originally the Naval Observatory. Its use as a medical museum of hygiene and its use as a medical school, even though conversion and alterations to the building had been made, these alterations were in fact more or less makeshift, poorly arranged and thoroughly inadequate and inaccessible. The Navy Dental School, established in 1922 as a part of the medical school, was located in a temporary wartime building of frame and stucco and was considered a fire menace in addition to being at considerable distance from the hospital and the medical school itself. The dental school very actively and very energetically supported the hospital.

Read into the record of the hearings were abstracts from inspection reports of the naval hospital Chelsea, Mass. the Marine Barracks, Quantico, Va., the Naval Hospital, Great Lakes, the Naval Hospitals, League Island, Parris Island, New York, Norfolk, San Diego, Mare Island, and Bremerton. In each of these abstracts, the inspecting officer praised the high quality of professional activities, mostly accomplished despite the inadequacy of the buildings and facilities available in each. He particularly recommended replacement of the medical facilities at Quantico, Great Lakes, League Island and Bremerton.

In support of the proposed construction of a new hospital in the Washington site the Hon. Melvin J. Mgas, Representative from Minnesota, inserted in the record his opinion of the matter based upon personal experience:

"I have been a patient at the Naval Hospital, Washington, several times and therefore had had ample opportunity to become acquainted with that hospital and its needs. I may say that I have inspected every Army hospital in this country, both in temporary and permanent buildings, and therefore I think I know something about the conditions in Service hospitals. Incidentally I want to say this--I happen to know that the Naval Hospital, Washington, has never turned down an emergency patient of any sort regardless of where that patient came from.

"I have been through these temporary buildings and when you gentlemen of the Committee go there to observe them I think you will agree with me that it is a disgrace to house our men in shacks that would be condemned and discontinued by any municipality in this country. Those temporary buildings at the Naval Hospital are the worst sort of fire traps imaginable. Just think of housing sick men in such places. Even in the stress due to war conditions, we should not place men in such emergency buildings. These buildings were constructed more than 10 years ago and were constructed to win the war. When they were built, it was thought they would be in service for not more than 5 years. The cost of upkeep is far beyond their value as hospital facilities. We cannot do anything looking toward economical administration of government by continuing to use such structures for hospital or any other purposes.

"We all know that the load of Veterans Bureau patients is not going down. On the contrary it is going to increase and we might as well recognize that fact and provide for it. We simply must have these hospitals. The question is, shall we rebuild this Naval Hospital and continue the hospitalization of patients of the Veterans Bureau there or build a separate Veterans Bureau hospital here in Washington? I do not believe the latter course would be true economy. Patients of the Veterans Bureau may obtain beds at probably half the cost it would involve if a new hospital were built for them here. In other words, by rebuilding this naval hospital we can save half the cost of providing for veterans who are hospitalized here. In addition to that, it cost about \$4.00 a day to hospitalize a Veterans Bureau patient in the hospital of a Veterans Bureau. These veterans are being cared for at the Naval Hospital here at a cost of slightly more than \$3.50 a day. Therefore, there is economy of operation as well as economy by war of not constructing a new veterans hospital if we rebuild this naval hospital. There are peculiar conditions in regard to the Naval Hospital, Washington, that should separate it from any general Navy program. This building would be of emergency character for one thing. By its natural location in Washington it gets many unusual patients--an unusual load. We have here probably more retired officers than at any other point in the country. They, in addition to the officers and men on the active list, are entitled to this hospitalization; therefore, we have a condition in connection with the naval hospital at Washington that does not apply in any other place in the country.

"Again, because this Naval Medical School is located in Washington, that hospital gets many patients who are sent here to receive the benefit of the splendid facilities afforded because these medical officers had made special studies.

"Outside of any consideration of a hospital building program for Washington--that program is not my main concern--I know that the present hospital facilities are not adequate for the naval personnel and those to be hospitalized in this place. Up there they are using storerooms for important medical work. As I remember they have an important laboratory in the basement of a building. It is necessary to take patients, operative patients, outdoors because the present buildings are built wrong. These buildings are scattered all up and down that hill. These conditions should not be.

"The bill before you is to provide adequate hospitalization, and that is the main consideration. It would take care of the Navy and we are going to have to take care of our veterans for a great many years to come in Army and Navy hospitals. The building program for the Veterans Administration contemplates the use of Army/Navy facilities and we cannot separate that fact by saying we will look out for the Navy only because the whole program is based on the theory that the Army and Navy is taking care of a proportion of the patients of the Veterans Bureau and it is the cheaper and more economical way to do it.

I hope you will all go down to the Naval Hospital Monday morning and see conditions for yourselves. You will never be convinced of the necessity for this new hospital and immediate action to correct these conditions until you go down there and see for

yourselves the actual existing need."

On 27 January 1930, the Committee on Naval Affairs visited the hospital and inspected it in relation to the proposal for new construction. The Committee continued the hearings for many days and apparently were highly impressed with the need for new, modern facilities in the Washington area. Impressed as they were, however, the temporary wooden buildings at the foot of the hill previously referred to were not torn down until the 1950's some 20 years later. During this 20 years, they were continued in use for hospital purposes until 1942 and in the war period they were used by the Bureau of Medicine and Surgery which occupied the hospital complex.

In support of the proposed construction of a new naval hospital and appearing before the Naval Affairs Committee were various representatives of the Veterans Administration, representatives of the American Legion and other veterans groups, each of whom not only supported the construction of a new 500-bed hospital but even suggested that more commodious facilities be provided.

As a result of these hearings the Congress passed Public Law 732 which provided:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the Secretary of the Navy is hereby authorized to replace, remodel or expand existing structures and to construct additional buildings with the utilities, accessories and pertinences pertaining thereto at the United States Naval Hospital, Washington, District

of Columbia, at a cost not to exceed \$3.2 million, of which \$100,000 should be charged to the Naval Hospital Fund; Provided, that the construction herein authorized should be subject to approval of the Public Building Commission under the authority of Section 6 of Public Buildings Act of 25 May 1926, to the same extent as other public buildings constructed in the District of Columbia and the plans for such construction shall be submitted to the Fine Arts Commission for advice.

Section 2 The Secretary of the Navy is hereby authorized to employ when deemed by him desirable or otherwise as advantageous by contract or otherwise, outside professional or technical services of persons, firms or corporations to such extent as he may require for the purposes of this Act without reference to the Classification Act of 1923, as amended, or to Section 3,709 of the Revised Statutes of the United States. In addition to employees otherwise authorized, expenditures for such purpose shall be made from the Naval Hospital Fund.

This Act authorized a new hospital, but construction did not begin on a replacement hospital at 23rd & E Streets, N.W. Instead, some 7 years later, on 14 May 1937, the House Naval Affairs Committee began hearings on a proposed bill, HR 6,547, to authorize SECNAV to proceed with the construction of certain public works in, or in the vicinity of, the District of Columbia and for other purposes. This bill proposed to give authority to SECNAV to construct on land already owned or hereby authorized to be acquired therefore, by purchase, gift or otherwise,

buildings to replace the present Naval Hospital and Naval Medical School, Washington, D.C. The total cost of the land and of the construction thereby authorized was not exceed \$4.85 million. The Secretary of the Navy was authorized to accept, on behalf of the United States free from incumbrances and without cost to the United States, title in fee simple to any land which may be acquired by gift.

This bill was introduced notwithstanding the previous authority, approved 25 February 1931, to construct a new naval hospital in Washington. In the interim, the Navy Medical Department, by and with the advice and consent of the Secretary of the Navy had decided that it would be more desirable to construct the new buildings and facilities on a site elsewhere in or near Washington instead of on the present site. Since such construction would involve the cost of the government of some \$6 million more than had been previously authorized, it was necessary to go to the Congress for such authority.

The Surgeon General who had testified in previous hearings, RADM C.E. Riggs, MC, had retired and been replaced by RADM P. S. Rossiter, MC, as the new Surgeon General. Dr. Rossiter was present at the hearings. The chairman of the House Naval Affairs Committee invited Dr. Rossiter to make a statement. Dr. Rossiter then made the following statement:

"Mr. Chairman the present hospital facilities at the Naval Hospital, Washington, and the Navy Medical School and Dental School connected therewith, have become inadequate for the purposes for which they were intended. The buildings have become obsolete and have deteriorated to such an extent that we have reached a point where very large expenditures are

required to maintain them in usable condition. For that reason we have felt it desirable at the present time to request authority to proceed with the construction of a new center.

"The estimate of BUDOCKS for maintenance alone for the next 7 years is \$276,753. To restore or replace the present buildings in proper condition would require approximately \$1 million."

Dr. Rossiter pointed out that the estimate of \$3.2 million, authorized in the Act of 1931, would be inadequate, since building costs had gone up approximately 25% in the intervening 6 years.

The Naval Hospital, Washington, Dr. Rossiter pointed out, was called upon to perform or carry out a large number of activities in addition to the actual care of naval personnel which in itself was considerable. It had been found advisable, in a large number of instances, for officers who appear on the sick list to determine the question of retirement for physical disability to be brought to Washington for such determination to determine just what their future availability for service in the Navy would be.

The sick officers quarters in the present naval hospital, Dr. Rossiter said, consisted of 38 rooms only. These were always overcrowded and a number of officers who should be hospitalized in this institution had to be transferred to Philadelphia or Norfolk. Dr. Rossiter pointed out that the Navy was also called upon at times to hospitalize a number of officers--several at a time--from the diplomatic service on request of the State Department. Also at times, he said, the attending physician at the Capitol desired to hospitalize members of Congress for diagnostic purposes or for the use of the facilities which he was unable to provide

in his offices in the Capital.

The Surgeon General pointed out that it would be advisable to locate the hospital and medical school activities elsewhere than on the present site, since a lack of space at the present location precluded the construction in accordance with the proposed plans. Also, he said, the fact that other federal construction in the vicinity restricted any expansion that might become necessary and would probably make such expansion architecturally unacceptable to the Fine Arts Commission because of such crowding.

The Chairman of the Committee inquired as to what was done in accordance with the 1931 approved law. The Surgeon General explained that the Medical Department had proceeded under the authority of the previously-enacted law to the extent of expending approximately \$100,000 as authorized for the preparation of plans, architecturally. In addition, it was believed that a more urgent matter at that time was to proceed with the construction of a new hospital in the Philadelphia area. And for reasons of economy that procedure was followed at the expense of the hospital replacement project in Washington, D.C.

An extended discussion then ensued between the Chairman and Admiral Rossiter as to the proposed location of the new hospital. The Chairman was insistent upon knowing in advance, where this location was to be and at the same time suggested that it might logically be selected outside the city of Washington where land was relatively cheap and expansion space could be acquired easily. The Surgeon General informed the chairman that he would be glad to have some assistance in selecting the site.

The Surgeon General informed the Committee that several sites were under consideration as prospective location for the new hospital should the Congress approve. It was suggested that a minimum of 40 acres of land would be required, the optimum of acreage being 70 to 100. Among the sites being considered was the so-called MacClean property, consisting of some 71 acres, located in the northwest section of Washington off Wisconsin Avenue. This site although considered ideal was probably out of the question owing to the land values in the vicinity and the probability that the asking price would be greater than the Congress would authorize. Another site under consideration was one near East-West Highway outside of the District, in nearby Maryland. This location would be some 15 or 20 minutes by automobile from midtown Washington.

At this time--that is, in the mid 1930's--considerable expanses of open land were potentially available in Montgomery County Md., many of which would be ideal locations for the construction of a naval hospital. Various members of the Committee appeared to show interest in these potential areas as being located away from heavy traffic normally encountered in midcity and also providing wide expanses of lawn and trees which would be fortuitous for the convalescence of patients. The construction of a new hospital complex on the existing Navy-owned property at 23rd & E Streets was ruled out for several reasons: the first was that this site offered no room for expansion; the Fine Arts Commission had indicated opposition to use of the land then occupied by the temporary buildings at the foot of the hill; this opposition restricted the usable area in the present site to some 8 or 9 acres. The general opinion among Medical Department planners was in opposition to the construction of high-rise hospital facilities, even though the Naval Hospital, Philadelphia, had been commissioned only 2 years earlier with this type of construction.

There appeared to be a generally-expressed opinion that the need for use of elevators to and from the upper floors of a high-rise structure was inimical to the best interests of the staff and patients. This opposition to high-rise structures appeared to be characteristic of the thinking during that period when medical people tended to support the idea of wide dispersion of hospital buildings. The Naval Hospital, San Diego, which had no buildings higher than 4 stories, and most of them only 2 stories, was cited as the ideal example of hospital planning and construction.

On the second day of the 1937 hearings, Admiral Rossiter was invited to make a statement at the opening of the session (held on 17 May). In this statement he repeated some observations already on the record, yet since the statement reflects the thinking of the Medical Department planners at that time it is well worth recording here:

"Admiral Rossiter: the bill approved 25 February 1931 authorized the remodeling and reconstruction of the Naval Hospital, Washington. The present hospital buildings have become obsolete and inadequate to fulfill their mission. As it was deemed more urgently necessary to complete the hospital at Philadelphia the BUMED did not request an appropriation of funds for the Washington hospital pending of the completion of that one at Philadelphia. Prior to the completion of the Philadelphia hospital, the urgent need for economy in Government expenditures further delayed requests for such appropriations.

The need for replacement of the Washington hospital facilities which existed 6 years ago, has subsequently become more urgent. The present buildings are inadequate, obsolete, and have reached a point where expenditures for maintenance are large and uneconomical. The bed capacity has been reduced from 600 to 178 since many buildings of wartime construction have so deteriorated that abandonment of their use as hospital space has become necessary. Buildings of permanent construction also have deteriorated to a degree where special precautions have had to be established. The estimated maintenance costs are prohibitive and any attempt toward modernization would cost at least a million dollars leaving the facility still inadequate.

"The bill, approved in 1931, restricted replacement of hospital facilities to the present site. The present bill would authorize its relocation on another site to be obtained by purchase or otherwise in the City of Washington or its vicinity. This change of location is considered necessary by the fact that the present site of less than 10 acres available for building is inadequate even for the present needs and wholly inadequate for any necessary emergency for wartime expansion. The probable location of other Government activities in the immediate proximity to the present site and the fact that approximately 6 acres of the present 15 would be unsable for construction purposes under the plans of the Parks and Planning Commission make it necessary for relocation. The present site is also noisy, both on account of its location near busy highways and airplane routes immediately overhead.

Should the Naval Affairs Committee desire to limit the amount of funds estimated for the purchase of the site it is suggested that such limitation be 15% of the authorized expenditure. It is planned to select a site in close proximity to Navy activities in the District of Columbia as may be obtainable considering cost suitability of location accessibility to District water and suitable transportation facilities.

The Naval Hospital, Washington, serves personnel in a very large area including the Navy Department, Navy Yard, Naval Air Station, Naval Research Laboratory, Marine Barracks, Naval Proving Grounds, Navy Powder Factory and certain special patients from the United States Naval Academy in Annapolis. The Naval Observatory, Navy Radio Station and a large number of retired personnel living in the vicinity and certain officers and persons of other Government activities also are served. Unusually large facilities for hospitalization of officers under examination to determine their physical qualifications for retention or retirement are required. Such facilities are also required for final determination as to the disposition of all Navy and Marine Corps mental patients. The proposed construction plan facilities not only for the Naval Hospital but for the entire Medical Center including the Medical School, Dental School, technical school for enlisted personnel, laboratory facilities, power plant and quarters for hospital corpsmen, nurses and a limited number of officers.

In answer to a question posed by a member of the Committee, Admiral Rossiter replied that if construction was approved on a new and different site, the present buildings in the naval hospital complex would be torn down; the probability or possibility was that the area would be taken over by the District of Columbia as parkland. It had been anticipated in the approval of the 1931 Act, that the Naval Observatory, then being some 80-odd years old, would be torn down. Since the best laid plans of mice and men often do not come to fruition, none of the buildings with the exception of the World War I temporary structures have been torn down as late as 1971; indeed, the naval observatory building has been designated as a permanent historic building. Presumably it is now immune from destruction, even though the Bureau of Medicine and Surgery, now occupying the old hospital buildings, may eventually move to a more modern accommodations.

In 1931, the Naval Hospital, Washington, had accommodated more than 200 Veterans Administration patients; owing to the delapidated condition of the temporary buildings during the 6-year period, Veterans Administration patients were no longer accommodated in the Naval Hospital, Washington.

It was brought out in the testimony that the plans for a new hospital on the present site which had been authorized in 1931 had been drawn and approved by the Fine Arts Commission. The plans had been prepared at a cost of almost \$100,000. It was proposed that the plans be scrapped as being unsuitable if approval for construction at a new location was received from the Congress. One of the reasons why more than \$4 million was requested for the proposed new hospital in a different location instead of the \$3.2 million authorized in 1931, was owing to need for additional buildings which were not required in 1931. That is, quarters would be required for nurses, some senior medical officers and for hospital corpsmen

as well as the power plant and new sewerage system expenses which would not have been necessary if construction had proceeded on the old hospital site.

As the result of the May 1937 hearings, the Committee approved the expenditure of some \$4.8 million and left the selection of the site to the good judgment of the Navy Department. Subsequently, with the favorable endorsement of the Naval Affairs Committee the Congress enacted the bill into law. Even though approved, the site, now consisting of the National Naval Medical Center on Rockville Pike, northwest of Washington, in Montgomery County, Md., no construction was started for another 2 years. Actual construction began in the term of a new Surgeon General, VADM Ross T McIntire, MC, and President Roosevelt himself, not only approved the site but suggested the basic appearance of the main hospital structure when he drew a rough sketch of the type of building he would like. In general, this sketch was used as the basis for the preparation of the architectural plans.

The authorizing act for construction of the Naval Hospital, Bethesda and the Naval Medical Center was approved by the House of Representatives on 9 July 1937. The House version was accepted by the Senate and authorization, known as Public Law No. 306, was approved by the President 16 August 1937.

Public Law 306 authorized the total cost of land and the construction of the Navy Medical Center not to exceed \$4.85 million, which no more than 15% could be expended for the purchase of the land.

The Naval Hospital, Washington, was decommissioned as of 31 January 1942 when the hospital was replaced by the commissioning of the new National Naval Medical Center, Bethesda. Contrary to the expressed opinions of successive Surgeons General that naval hospital buildings would have no further use it was necessary to provide additional space for the Bureau of Medicine and Surgery incident to World War II. Very shortly after the decommissioning of the hospital, its buildings were altered for use as office spaces and the vastly expanded Bureau moved in. The temporary buildings referred to above were not torn down until the early 1950's but the permanent brick structures with the exception of the officers' quarters have been occupied ever since until the present time (1971). The officers' quarters which were part of the hospital complex and occupied by the commanding officer, executive officer, chief of medicine and chief of surgery were occupied by flag rank officers from other bureaus early in World War II and up to this time are still occupied by successive flag officers of the Line. No medical officers since the abandonment of the site by the hospital have occupied family quarters on the previous hospital compound.

In 1971, there have been rumors circulating that with the exception of the Naval Observatory building the remaining buildings are destined for demolition and the remaining 17 acres of land will be transferred to the National Capitol Parks Authority of the District of Columbia. In 1971, the Department of Defense and the Navy Department had a tentative 15-year plan which envisioned eventual occupation by the majority of Navy activities in the Washington, D.C. area of the so-called Anacostia Air Station land and the Washington Navy Yard areas.

In 1886, in the Surgeon General's Annual Report, a review of missions for the preceeding 20 years was made. During that time, 2,216 admissions to the Washington Naval Hospital were recorded of whom 90 died. There was an average patient admission rate of 110 annually. Of these 2,216 patients, 350 were in the category of venereal disease--an age-old problem. The medical officer in charge, Med. Dr. A. L. Gihon, complained about the civilian employees furnished for the administration of the hospital. It was his recommendation--a recommendation joined in by many medical officers of the period--that civilian employees be replaced by enlisted hospital attendants, nurses, fireman, cooks and others. Dr. Gihon pointed out that the discipline of the hospital as a military establishment was seriously interferred with by the presence of civilian employees who were not submissive to regulations, who expected unwarranted privileges and had to be under constant supervision to be kept from stealing articles of food and furniture. Dr. Gihon also criticized the methods then commonly in use of transporting patients, often in open wagons exposed to the cold and other elements. This criticism was directed to the Commandant of the Navy Yard who had been guilty, on several occasions, of sending patients to the hospital in such open wagon conveyances.

WHIDBEY ISLAND, WASH.

The former Station Hospital, Whidbey Island, Oak Harbor, Wash., was reclassified as a naval hospital and commissioned as such on 1 July 1968. The hospital was established during World War II in support of the naval air station on that site. The hospital had a bed capacity of 33 expandable to 45. The first commanding officer of the newly designated hospital was CAPT B.E. Senter, MC, USN.

YOKOSUKA, JAPAN

Prior to its surrender at the end of World War II, and for many years previously, Japan had maintained a Navy Base at Yokosuka in which, among other facilities, was located the largest drydock in the world. At the end of the war and in the beginning of Allied occupation of Japan, the United States Navy occupied the Yokosuka Navy Yard in support of the Pacific Fleet in that area. To support the Navy Yard and other Navy activities in the vicinity a naval dispensary was immediately established at Yokosuka.

This dispensary which was capable of providing hospital treatment in a limited form continued to expand in the late 1940's until by the early part of 1950 the activity was essentially a naval hospital. Shortly after the beginning of the Korean Incident, in June 1950, the activity was redesignated as a naval hospital. Among the many Medical Department services, in addition to normal routine dispensary services provided, was the conduct of physical examinations on Japanese Nationals seeking employment at the Yokosuka Navy Base. It was reported, for example, that more than 2,800 Japanese had been given physical examinations during 1949. The dispensary also provided considerable dependent's medical attention--both inpatient and outpatient--at the Fleet Activities Dispensary.

During the Korean conflict, the Naval Hospital, Yokosuka, expanded greatly and was the principal naval facility providing medical support in Japan. The continued presence Pacific Fleet in the Orient required the maintenance of the facility as a hospital. When it became evident that the United States and its military components were destined to

remain long in Japan as an Army of Occupation, the mission of the hospital was redefined: "to provide general clinical and hospitalization services for active duty Navy and Marine Corps personnel, active duty members of other Armed Services, dependents of active duty personnel and other authorized persons as outlined in current directives. To cooperate with military and civilian authority in matters pertaining to health, sanitation, local disasters, and other emergencies." Throughout the 1950's and early 1960's the hospital accomplished this stated mission.

With the increase of activities in Southeast Asia in connection with the war in Vietnam, preparations were made to provide additional medical support in this hospital. The first casualties received in Yokosuka from SEASIA were 18 patients admitted during July 1965. The practice--inaugurated early in the Vietnamese War--of transporting casualties by air directly to the United States when those patients were considered to be in need of long-term hospitalization or probable discharge, reduced the expected work load in the Yokosuka facility. Nonetheless, by the end of March 1967 more than 5,000 patients from SEASIA had been admitted to the Yokosuka facility. It was noted in the annual report for 1967 that most of the casualties admitted from Vietnam had been surgical in nature. Medical problems and neuropsychiatric patients had been significantly lower than anticipated.

Between 1965 and 1968 inclusive this hospital received large numbers of patients from SEASIA including as many as 1,087 during a single month. More generally during these years the average monthly admission rate was about 700. By the end of 1969 this great influx of patients from SEASIA fell off considerably. In the first few months

of 1967 the patient load had been reduced to the point that it was possible to establish the operating bed capacity of the hospital as 450, and even this established capacity resulted in little more than 50% occupancy.

For its service during the period 1 September 1965 to 1 April 1969 in support of the Navy and Marine Corps engaged in combat, the Secretary of the Navy cited this hospital in a commendation, entitling all members attached to the hospital during that period to wear the Navy Commendation Ribbon.

YOKOHAMA, JAPAN

The Naval Hospital, Yokohama was established in what was then called the foreign residence section of Yokohama early in 1872 and was destroyed by the gigantic earthquake which struck Japan in 1923. The first officer in charge was Surgeon H. C. Nelson; CDR U. R. Webb, MC, USN was commanding at the time of the earthquake. The size of the staff always was small, usually no more than two medical officers with some nurses and enlisted personnel. The cost of operations during the time just prior to the earthquake was about \$20,000 year. The number of patients hospitalized each year was generally under 100. The hospital provided medical support to ships in the Asiatic Squadron and to some dependents.

After a naval hospital was established in the Philippines following the Spanish-American War, the Yokohama hospital was chiefly a convalescent facility. In this hospital were treated Army and Navy families on leaves and there actually was little hospital work. In fiscal year 1915, there were only 65 admissions. Service was provided officers and men convalescing from diseases and injuries acquired in the Philippines or in the trying climate of the Yangtze River Valley in China.

Considerable damage to the buildings and grounds occurred by earthquake on 1 October 1917 which damage was repaired. In 1918, there were some patients admitted when an influenza epidemic occurred.

The Surgeon General's Annual Report for 1879 reported that the hospital had admitted 75 patients during the year with a total of 4,182 sick days. An average of 11 or 12 patients were treated at one time. In 1880, the census dropped to an average of 10 with only 65 admissions during the year.

In 1880, Med. Insp. A. C. Rhoades drew attention to several matters pertaining to the sanitary condition of the hospital:

Ventilation of the ward on the second story of the main building of this hospital is not entirely satisfactory, he reported. Apparently he had reported this in preceeding years and funds had not existed for making such modifications as he had recommended. It was an urgent problem, he pointed out; the number of patients at any one time was so small that too much difficulty in ventilation was not often encountered but if every bed were occupied the number of patients under treatment would be limited in obtaining a proper amount of pure air. Dr. Rhoades reported that drinking water for the hospital was supplied by a well 75 feet deep, midway between the rear of the main building and the cook house; an examination of the water in the previous year had showed it to contain organic matter and the drains in the vicinity were overhauled and found to be worn out. These since then had been thoroughly repaired and contamination of the well and its source is now impossible.

The roof on the building for infectious diseases had been leaky and the wards were uninhabitable for that reason having received damage from heavy rains from the recent past. A new roof was put on which was now in good order and the place can be occupied whenever required. Dr. Rhoades pointed out that there had been no smallpox in Yokohama for the past 2 years owing to efficient regulations for vaccination which had practically irradiated the disease. He expressed some doubt that total immunity would continue but he believed that the enforcement rules of the Japanese would prevent a serious epidemic. The Japanese Government maintained a vaccine farm in the suburbs of Tokyo where fresh bovine virus

usually could be procured and that the United States Navy drew supplies from that place. Malarial diseases were common in and about Yokohama. It was as common in the hospital area as it was in the low-lying marshy district. This he attributed to the proximity of the bluff (on which the hospital was located) to the rice fields from which the prevailing wind bears the air loaded with malaria to the heights above. Ke-ke, or beri-beri, was an endemic disease of Japan and often met with among the native population; thus far he reported foreigners had not suffered from it yet liabilities to the disease increased with the length of residence in the localities where it prevailed. He expressed the opinion that little danger prevailed, however, that the United States sailors in their brief visits on shore would ever be affected since a somewhat prolonged exposure to the cause seemed to be necessary for the development of beri-beri. The treatment for beri-beri at the time was symptomatic: hydrogogue cathartics and diuretics were given for the dropsy and quinine and iron for the anemias which was not much of a problem but a feature of the advanced stages. At an early period, permanent recovery follows removal from the infected location but the disease recurs subsequently from very slight exposure to the cause which was believed by many Navy physicians to be a peculiar malaria developed in damp cities.

In 1881, another reduction in the number of admissions were reported there being only 55 during the previous year. In 1889, Surgeon C. U. Gravatt reported Yokohama free from any important epidemic diseases. There was a serious apprehension of a return of cholera in the early part of the year but with the exception of a few scattered and localized outbreaks none appeared. Dr. Gravatt was lavish in his commendation of Japanese medical authorities for adopting stringent sanitary and

preventive-medicine measures which he attributed to the prevention of the spread of disease.

Dr. Gravatt reported that in the past year or so Yokohama had instituted a program whereby water was piped some 25 miles to the city and it was hoped that the use of these more sanitary water supply conditions would improve the general health thereabouts. Previously the wells from which each individual home received its water were frequently collecting points for spread of diseases and although the hospital was not a party to the consolidation of this water it was hoped that arrangements might be made to include the hospital in its distribution. Efforts were also being made to light the bluff by gas or electricity during this period. The modernization of the naval hospital was strongly urged so that advantage be taken of this new method of illumination.

In 1890, the medical officer reported that repairs and improvements were being made; that outer walls of all buildings were frequently cracked and the plaster broken by repeated earthquake shocks, which were not serious, but required constant maintenance efforts. It was again urged that electric lighting be installed in the hospital as had been recommended the previous year. In 1890, extensive repairs and improvements were made throughout the hospital including the replacement of the decks with Oregon pine, the repair of bedsteads and tables plus painting; the apothecary's quarters had been enlarged and the office, dispensary and several other rooms had been verandas had been built, the kitchen had been enlarged and refitted in part, and an additional bathroom had been installed in the surgeon's quarters. A disinfecting house was built with a spacious oven in which the temperature of 230°F. could be maintained. A general library for the use of officers and patients had been added and additional

ornamentation had been made to the grounds.

The brush system of electric lighting had been installed in the hospital and put in to use by 17 April 1891. Every necessary safeguard and conveniences in the way of fuses, cut-out switches, and so forth, had been introduced. The inspector for the Yokohama fire officer reported that there were 97 incandescent lamps installed and grimshaw white core wire was used throughout. The tests made spoke well for the installation of wire and for the manner in which the wire had been laid. The installation was effected by the Union Light Company of Yokohama.

In a special report on cholera in Japan, Surgeon C. M. Gravatt reported that the first epidemic, of which there were authentic accounts, occurred in 1822 and that there was good evidence that it had been introduced into Japan by a Dutch trading ship from the Island of Java. The second epidemic took place in 1858 and lasted till 1860 and was attributed to patients brought to Nagasaki in the USS Mississippi from Chinese ports. The third epidemic began in Nagasaki and Yokohama almost simultaneously, in 1877, and it too was charged to importation from China. Since that time, epidemics had occurred in 1879, 1881, 1882, 1885, 1886, and 1890. In a 14-year period there had been 456,080 patients diagnosed with cholera, 66.5% of whom had died of the disease.

In 1891 Surgeon Franklin Rogers reported 108 admissions for the year including 4 with variola and all recovered. Intermittent fevers constituted the major cause for admission.

In 1893, Surgeon Gatewood described the Naval Hospital, Yokohama, as having been constructed in 1872 and commissioned on 16 May of that year with accommodations for 34 patients including 8 officers. It was delightfully situated amid the residences of the foreign population near the English and German Naval Hospitals on a bluff, southeast of the main or lower section of the City of Yokohama.

The hospital was described as consisting of a main quadrangle of two stories and two detached buildings of one-story. One of these detached buildings, called a wing, was situated to the east and to the rear of the main building so that its front was nearly on a line with the rear of the main building with which it was connected with an outside passage. The other buildings containing the dining room, kitchen, pantry, cooks room, and storerooms was nearly 30 feet in the rear of the main structure and connected with the main wing by a passageway. The whole hospital was constructed of tile and plaster fronting toward the south and was nearly surrounded by verandas on all stories.

A smallpox hospital with a disinfecting chamber nearly was 110 feet from the main building and near the northwest limits of the grounds. It was a one-story building containing a ward 25 by 54 feet and two rooms 14 by 15 feet. The ward had 8 windows and a door and contained 18 beds with only 644 cubic feet of air space to each. Each room had three windows, a door, and two beds with 987 cubic feet to each bed. All of these doors were 87 by 41 inches and the windows were 58 by 35 inches.

The main building was 85 by 35 feet. On the first floor were quarters for the resident medical officer, offices, dispensary, bathroom, and water closet. On the second floor was a ward containing 8 beds with 902 cubic feet to each; four rooms having 2 beds each for sick officers with 1,200 cubic feet to each bed and two rooms for nurses. The ward had four windows and three doors and each room three windows and a door.

In the wing was the main ward 54 by 24 feet and nurses' rooms and water closets. The ward contained 18 beds; it was lighted by eight windows each 76 by 43 inches and could be entered from four doors. All water closets had earthen jars under the seat which were removed from the opposite side of the building every night. The grounds on which the hospital was located contained approximately $1\frac{1}{2}$ acres, shaped somewhat liked an arrowhead with blunted barbs. The grounds were beautified with grass plats, trees, walks and a pretty shaded mound 20 feet high. East of the wing was the residence of the medical officer in charge.

The ventilation of the hospital was good as the many windows and doors were assisted by the badly fitted woodwork. All the buildings and grounds were lighted by electricity. The water was obtained from a well and by storing rain water in large iron tanks. The well furnished an ample supply of water containing $13\frac{1}{2}$ grains of solid matter to a gallon including silicic acid, chloride of sodium, carbonate of magnesium and sesquioxide of iron and sulfate of calcium. All drinking water was filtered and in the summer months boiled. The rooms and wards in the

main building had open fireplaces, but these being inadequate, stoves were used. The medical staff of the hospital, in 1892, consisted of a surgeon and a passed assistant surgeon. The other staff members included an apothecary, watchmen, two cooks, a gardener and four coolies. Two of the coolies did the cleaning and acted as nurses. The other two were laborers. The employees had quarters in buildings detached from the hospital. The watchman acted as night nurse and the coolies also set the table. The gardener was also carpenter and gatekeeper. The apothecary, in addition to his usual duties, superintended the nurses and issued stores. The daily average of patients during 1892, was 10. The patients came entirely from the Fleet and many of the diseases originated on the coast of China. Venereal diseases were common, diarrheal and malarial disorders were not uncommon and smallpox was an occasional visitor. Some of the patients came from Yokohama where vessels of the Navy passed much of the year to escape the debilitating summer of the south. The city, frequently spoken of as a desirable sanitarium, has a delightful climate though July and August has a mean temperature of 80°F. with a minimum of 70°F. January was the coldest month having a mean 38°F. and a minimum of 30°F.

In 1894, a 15,000-gallon cistern was constructed to draw off rain water and was considered to be a substantial and solid piece of masonry. It was believed that nothing short of a violent earthquake strong enough to destroy the building would damage the cistern in any manner. Surgeon Paul Fitzsimmons was the officer in charge during this period.

In 1895, only 51 patients were admitted, owing to the Sino-Japanese War, which kept the greater portion of the Fleet in Chinese waters. Although the number of patients had been limited, the resources of the hospital had been taxed the greater part of the year by caring for insane patients. The length of time some of these remained made it quite a problem to secure the proper amount of exercise and sunlight. The war also resulted in keeping several patients longer than would necessarily have been done otherwise since the Fleet was not in and transportation back to their ships was not readily available.

Japan experienced a severe epidemic of cholera in 1895 but it did not affect the personnel of the Naval Hospital. The well caved in during the year and had to be cleaned out and relined with brick. After repair of the well, a new pump was installed and an iron roof placed over it with a brick platform cemented over. The 15,000-gallon cistern had been made more effective for fire-fighting use by the attachment to it of a small pump easily worked by the hospital force and which was capable of throwing a stream of water vertically 70 feet through a quarter-inch nozzle. The Yokohama fire brigade had been allowed to store a large fire engine on the premises which contributed to the fire protection available. The city, which had years before installed a water supply system in the settlement, still had not been able to extend the water service to the vicinity of the hospital, located on the "bluff."

An inspection report of the hospital at Yokohama, in 1897, described the facility as being in a salubrious location at the highest part of the bluff with full exposure to the winds of the hot season and it was wisely selected. The land on which it was located had become highly valuable in a very desirable neighborhood. A fine and attractive appearance

was made by the well kept buildings and beautiful grounds. The British Naval Hospital was across the street in an equally good location, but it had the advantage of larger grounds it being some six acres in extent. It was capable of caring for 100 patients.

In 1897, Surgeon W. F. Arnold published a special report in the Annual Report of the Surgeon General on cholera in Japan and plague in China. It was Dr. Arnold's conclusion that cholera in Japan was a disease introduced from foreign lands and was specially prominent in the latter part of the 19th century when Japan began to increase her intercourse with other nations. The large number of foreign ships entering Japan and Japanese ships going to other nations resulted in several severe cholera epidemics. China was blamed as the source of nearly every instance of epidemics that occurred in Japan which had seen at least six very serious ones during the 1800's. The conservation of human excrement and its use in fertilization was blamed as being the culprit in the spread of cholera among the native population. Dr. Arnold was optimistic that the sanitation and preventive medicine practices which Japan had adopted in the previous 30 or 40 years would eventually effectively control cholera.

The Spanish-American War did not cause an influx of patients into Yokohama even though operations in the Philippines by the Navy were quite extensive. Two years later, in 1900, however, the Boxer Rebellion brought on increased emphasis for the necessity of expanding the hospital accommodations at Yokohama. In the Surgeon General's report for that year it was noted that the present hospital had accommodations for four officers

and 33 enlisted men and the extension of the United States interest in the Far East requiring the presence of a large squadron had kept the wards filled and made it necessary to send to the United States patients who might otherwise be cured on station and returned to duty, thus incurring great expense and losing their services. So long as the status incident to cruising in the waters of the Philippine Islands was unchanged it was practicable to continue existing arrangements until a Congressional appropriation could be obtained to enlarge the hospital. The engagements in China, however, created an immediate emergency since the wounded were necessarily transferred to the hospital at Yokohama. In order to prepare for their reception, many patients had been transferred to Mare Island in the United States; in addition, such suitable accommodations were secured outside the hospital as circumstances would permit. In view of all the circumstances, urgent recommendations were made by the Bureau to the Navy Department, to authorize the expenditure of \$20,000 for building an addition to and furnishing additional accommodations at the hospital. As the question of this extension had been considered for some time and the general plans already arranged, it was practical to give directions for the work by cable on 30 July 1900. It was expected that the new building constructed in accordance with the locality would be completed in a very short time.

The new building authorized in 1900 was 112 feet long by 40 feet wide fronting toward the southeast; it consisted of a basement story of brick and two upper stories of frame covered with tile. The roof, under which is an attic, was tiled over shingles. All the frame timbers were very substantial and strongly joined on account of earthquakes common

in that locality. The basement had a pitch of 14 ft. and its floor on the southwest side was on the level of the street. It contained an engine room, boiler room, coal room, laundry, sterilizing room, and a large room at the front which could be utilized as a reading room. Each of the two stories had a pitch of 11 feet 5 inches. On the first floor were an office, two rooms for members of the Hospital Corps and three wards each 18 by 30 feet. In the rear were bathrooms and closets and a room arranged for patients requiring special strength.

On the second floor were the operating room, instrument room, laboratory, two rooms for surgical patients, a room for members of the Hospital Corps, three wards similar to those on the lower floor, bathrooms, and closets. In addition to windows, special provision was made for ventilation of the wards by additional openings near the ceilings and floors.

The new building stood on the highest part of the bluff overlooking the city and harbor with the wards open to the breeze and the sun. It was heated by steam and lighted by electricity, the current being obtained from the city but it was also piped for gas. The water supply was chiefly from a deep well now sunk and two 5,000-gallon tanks constructed of wood on brick foundations and situated on a mound near the building. In the attic were two iron tanks each having the capacity of 300 gallons. These were filled by a steam pump. Fire hose outlets on each floor were connected with all these tanks and with an old underground reserve cistern having the capacity of 40 tons. The specifications for wiring the building made provision for 33 lights, 14 switches and 5 bells in the basement; 34 lights, 12 switches, and 9 bells and 11 extensions in the first story;

and 40 lights, 15 switches, 11 bells and 13 extensions in the second story. All lights were 16 candlepower and were provided with shades and each floor was wired independently and the lights were controlled from the engine room. The fixtures were combination gas and electric. The occupation of this building permitted extensive changes in the old hospital. Those changes were increased by construction of a small building near the hospital for the accommodation of the junior medical officer. Many changes were required to be made in order to greatly increase the accommodations for sick officers.

In 1901, the hospital had a marked increase in the number of patients treated, there being 190 admissions.

When RADM P. M. Rixey, MC, became Surgeon General one of his ten stated most important problems for solution was the rebuilding, repair and new construction of naval hospitals. In his 1902 report to the Secretary of the Navy, he had this to say in relation to Yokohama:

"The usefulness of this hospital as a sanitarium for the sick from the tropical portions of this station becomes increasingly apparent now that the completion of the new annex has about doubled the capacity of the institution. Cases of dysentery, beri-beri and the various fevers which tend to become chronic in the tropics improve rapidly as a rule upon transfer of this favorable climate resulting in their return to duty instead of being invalided to the United States. A number of changes have been made in the old building and there are now 10 rooms of good size, one small room and a dining room besides the quarters in the annex for three patients which had been fitted up for the

accommodation for sick officers. The frequency of earthquakes renders necessary many minor repairs to plaster walls, roof tiles and wood work but no serious injury has been experienced during the past year. The dining room for enlisted men has been enlarged recently by one third but is still too small and at times it is necessary to serve meals in two relays. Despite many repairs the old building is not entirely satisfactory and it will probably will be necessary to enlarge and remodel it. The grounds have been kept in good order and present an attractive appearance. A good deal of work has been done upon them including the erection of a double iron gate at the basement entrance to the annex, raising the height of some of the retaining walls, repairing brick and cement walks and laying new ones and in keeping the cemetery in good order.

"The water supply is now satisfactory. It is drawn from a well 100 feet deep and forced by steam pump into 4,000-gallon redwood tanks. From these tanks, water is supplied by gravity to the boiler, laundry, junior medical officer's quarters, kitchen, and lower floor of the old main building. Also to a large underground cistern of 40 tons capacity in the yard which is kept filled for use in case of fire and has piped connections for three hand-force pumps. The annex building is supplied with water from two 300-gallon iron tanks in the attic which may be filled by a steam pump from the mound tanks but are actually in connection with the city water works.

"Upon the completion of the water mains on the bluff on the first of January, one two-inch pipe was led into the boiler room of the annex building whereby by means of previously-planned manifold valves immediate connection with the pumping system was made giving the hospital a good supply of city water. This is of excellent quality brought in from the mountains 11 miles from Yokohama and has enough pressure to send a stream to the highest roof in the compound. This also obviates the necessity for steam on the boiler for pumping it up to the tank. The new annex building is large and owing to its situation on a bluff overlooking the city presents an imposing appearance. It has withstood, without damage, repeated earthquake shocks thus indicating the strength of work and the character of construction. Both gas and electricity may be used for lighting and the building is heated by steam. The electric light wiring is satisfactory but there was at first some little trouble with the heating apparatus and gas pipes; these difficulties, however, have been entirely overcome, the operating room is well lighted by two large windows and artificially by clusters of electric lights and a portable lamp in a reflector above the table. The walls and ceilings are hard finished and painted with white silicate paint. The floor is hard cement which is brought 18 inches up the walls. The sterilizers for water and dressings are placed in the entry way outside the operating room and are supplied with water and steam by independent pipes from the boiler rooms in the basement.

The bathrooms, two on each floor, have iron bathtubs painted with silicate paint and an abundant supply of water both from the tanks and from the city water works. In each bathtub there is a steam pipe for heating the water. The waterclosets and urinals are of approved modern construction with overhead tanks and trapped drains. In the absence of a general sewer system in Yokohama, the disposal of water and excreta proved a troublesome problem. Fortunately, there was already a sewer down the narrow land leading from the bluff to the canal below. A brick and cement bank was constructed of some 400 gallons capacity underground but on a higher level than the lane, with a sluice valve at the bottom projecting through the stone retaining wall into a small recess protected by an iron gate. A syphon drain pipe is led into the side of the tank about half way up communicating with the street sewer which keeps the water level down to its opening. The more solid contents are drawn off by the lower sluice valve by night scavengers who take it away in specially-constructed carts. With the aid of disinfectants this has proved satisfactory. The hospital, other than the annex, is still dependent upon waterclosets and the nightly removal of excreta and garbage by scavengers which is a universal custom in Japan.

"Five of the six wards have been equipped and put in use the rear ward on the first floor having for the present been fitted up as a reading and smoking room for convalescent patients. The large space in the attic, the whole length of the building, is plastered and smoothly floored and would be available for sick quarters in an emergency. A large front room in the basement has

been assigned for the Marine Guard of six men and a sergeant in charge having a small adjoining room for his use. Lockers for clothing or closets and a bathroom have been constructed conveniently at hand.

"A complete set of modern fittings for the operating room and much of the furniture for the annex have been sent out from the United States by the Bureau including white enameled iron bedsteads and bedside lockers and complete set of laundry machinery, a large sterilizer, boiler, pumps, and so forth, all of which has since been installed. Other necessary furnishings as chairs, tables, carpets, and window shades were obtained in Yokohama.

"Out of the authorized expenditure of \$20,000 a sum was set aside to build a small cottage for the junior medical officer and his former quarters in the old building became available for the use of invalid officers, after such general operations as were necessary to fit them for the purpose. The new cottage was an attractive frame building of one story and attic, four rooms, two berths, and closets situated in the southeastern corner of the grounds. It is lighted with combination electric and gas fixtures and is supplied with water. The importance of this hospital and the urgent need of kitchen and nursing facilities together with the important changes in the older features of the hospital compel the Bureau to ask for an appropriation of \$25,000 to be made available immediately."

Medical Inspector George E. H. Harmon, in 1902, reported that 217 patients had been under treatment during the year. In the next year there were 247 patients under treatment. Repairs and modifications, as requested the previous year, were approved and made in the hospital. The Surgeon General continued to praise this hospital as being in salubrious environment for those needing recuperation from illnesses acquired in the Asiatic station. The location of the hospital led to its being known as the "garden spot of the city." In 1904, there was some reduction in the number of patients served owing to the withdrawal of portions of the Asiatic Fleet from the waters in and around Japan in consequence of the disturbed conditions in the Far East. Somewhat extensive repairs were necessary during the year to correct settling of the foundations which caused extensive damage to plastering. Electric wiring in this building and the junior officer's quarters was discovered to be unsafe in consequence of defective installation and change of voltage in the city electric supply. These defects were corrected. New equipment had been supplied, and a new range for the kitchen had been ordered but not yet supplied.

The need for additional space was becoming acute and negotiations were in progress with the Japanese authorities for the acquisition of a small lot adjacent the grounds for expansion purposes.

In 1905, it was reported that the Congress had declined to authorize the purchase of this small lot and consequently it was necessary to modify building plans for expansion to improve the hospital. Delay in execution of the plans had occasioned no particular inconvenience since during the continuence of the Russo-Japanese War the vessels of the Asiatic Fleet had frequently visited Japan and the number of patients had been admitted

smaller than previous years. Normal maintenance repairs continued to be made within the limitations of the available funds.

In 1905, the Congress authorized the purchase of the extra plot of land which was acquired for \$5,000. As a result of the Russo-Japanese War the patient load remained low and only 103 patients were treated during the year. Continued maintenance and repairs were accomplished routinely.

In 1908, a new main building was constructed and unoccupied. In conjunction with the building of this structure a new kitchen was erected near the site of the old kitchen the latter having been torn down as no longer of value. Other work in connection with new construction, such as laying of concrete paving, building pipe tunnels, a drainage system and grading and so forth was completed. A wire fence was erected in the rear of the kitchen and main building, stonework about the compound was pointed up with cement and the stone wall at the other side was reconstructed; a small frame building was erected for storage and use as a temporary morgue in the rear of the annex. A new main entrance and gateway was also provided. The advisability of additional boiler capacity and instalation of a dynamo were matters for future consideration.

During 1908, only 56 patients were under treatment during the year. The reorganization of the Fleet in the Pacific resulting in leaving only vessels comprising the Third Squadron which brought on a reduction of personnel on station and explains the diminished number of patients treated. The comparative inactivity of this hospital from a professional viewpoint was reported to have been fortuitous inasmuch as the work of rehabilitation with new construction had necessarily materially reduced the facilities

for the convenient care of a larger number of patients.

Nothing remarkably important occurred at Yokohama in the following years up to 1915 when the Surgeon General reported that repairs were continued by the hospital force and had proved satisfactory. The buildings were maintained in excellent condition. The patient load was small although the practice was instituted of caring for Army and Navy officers and their families on leave in Japan as well as officers of the Navy and Marine Corps on duty at the Embassy in Tokyo. It was stated in the Annual Report for 1915 that if never used for anything but a convalescent home for the sick before being invalided to the United States, it would be worth while to the Government to much more than it now cost to maintain. On 1 October 1917, a violent tornado damaged the buildings and grounds. Twelve trees were uprooted and the roofs, sashes, shutters, glass in the main building and other buildings were destroyed or damaged. Repairs to correct this damage cost about 4,500 Yen (\$2,250).

In 1918, the Naval Hospital, Yokohama, was one of the few if not the only one which had not been materially expanded for the care of an additional patient load during World War I. The hospital continued in operation but its patient load was not materially increased owing to the general lack of activity by the Navy in the Far East during the year. At the end of the war, in 1919, an epidemic of cholera, alleged to have started in the Philippines and spread over portions of China, was effectively stopped in Japan. A number of isolated cases swept through quarantine barriers but each case was promptly recognized and different points of infection were stamped out. Some 298 patients passed through the hospital in 1919, including members of the American Red Cross who

were taken care of on their passage to Siberia from the United States. On 26 August 1919, 12 Czechoslovak soldiers were admitted from the steam ship Heffron which was damaged in a gale while enroute from Vladivostock to Trieste. These men were in charge of the American Red Cross. One man died of tuberculosis and the rest, except one, were returned to their respective ships. All men improved in health. One soldier was operated upon for cholelithiasis. An excellent X-ray machine was installed during the year and added greatly to the efficiency of the hospital. The old Marine quarters in the annex building was converted to a recreation room with reading material and a victrola kept there. The hospital personnel had been encouraged to play tennis on a most excellent court. The buildings were reported as being in good repair except for the roofs and general maintenance was continued as in previous years.

An article published in the Hospital Corps Quarterly in January 1922, written by Chief Pharmacist H. E. Randolph, suggests that the Naval Hospital, Yokohama, was ordered to be created by RADM John Rogers in August 1871. On that date, Med. Insp. H. O. Mayo was directed to superintend the erection of a naval hospital at Yokohama. In an order from the Bureau of Navigation, dated 16 December 1871, Surgeon H. C. Nelson was directed to report to Admiral Rogers for duty at the naval hospital; apparently he was the first officer in charge.

Mr. Randolph stated that the hospital establishment occupied a plot of land known as No. 99 Bluff. The title "Bluff" was derived from the fact that this part of Yokohama was about 100 feet higher than the city proper. The land occupied by the hospital was held under perpetual lease, executed between the Governor of Kanagawa Prefecture and the Hon.

C. DeLong, United States Minister to Japan. The lease stated that the land was given for the use as a hospital for the United States Navy from the 12th day of the ninth month of the fourth year Meiji-Kanoto-No Hitsuji (the 25th of October 1871). The lease provided that the plot of ground was to be used for no other purpose than for a hospital and should any of the provisions be violated that the lot and buildings thereupon should become the property of the Japanese Government.

The hospital establishment, in 1921, was described as consisting of a main building, an annex, galley, commanding officer's quarters, Japanese employee's quarters, two sets of servants quarters, and a greenhouse. The main building was a two-story structure of red brick trimmed with whitestone, built on the colonial style. The annex was a plain three-story brick building. The galley was a small detached building also of brick while all the other buildings were wooden. The buildings and grounds were well kept and the American hospital considered one of the show places of Yokohama. The hospital was rated as being capable of caring for 100 patients. The complement of the hospital in 1922 was one medical officer, a pharmacist, two chief pharmacist mates, and ten other hospital corpsmen. In addition, there was on duty in 1922 one chief yeoman, a chief electricians mate, and three mess attendants as well as 17 Japanese civilians. The commanding officer also acted as special disbursing agent for Japan and officer in charge of the Navy coal depot at Yokohama.

Mr. Randolph was of the opinion that the hospital had long outlived its usefulness. He reported that since he had been on duty the average number of patients under treatment was 3 with a maximum of five. He reported that an American warship had not visited Yokohama for about

a year and consequently the staff considered itself to be the most isolated naval establishment in existence.

Nonetheless, Mr. Randolph reported that surroundings at Yokohama, while not all to be desired by an American, were interesting and a man could visit many places and find something new in each one. Among the interesting sites of Japan were the old Shinto and Buddhist temples, shrines and torii, some of which were thousands of years old. At Kamakura, about 15 miles from Yokohama, was located a great bronze Buddha or Daibutsu, more than 49 feet high and whose eyes, 4 feet in length, were made of gold.

If Mr. Randolph's opinion of the usefulness of the Naval Hospital, Yokohama, was a death wish, it was realized in 1923. On 1 September of that year the morning was described as "one of the most brilliant sunrises ever seen in the area; the deep shades of rose made a beautiful background for the white sails of fishing boats on their way out into the bay." This was the description made by two navy nurses identified only as "E.N.L." and N.E.T." in an article published in the Navy Medical Bulletin in July 1924. Two hours after this beautiful sunrise, a severe rain and wind storm which lasted about 2½ hours occurred.

"A few minutes before noon, and without any warning of any kind, the portion of the Naval Hospital, Yokohama, in which I was," said one of the authors, "seemed to rise and shake violently in a barely perceptible pause and again the building shook with renewed violence. Though we were accustomed to frequent shocks this one was quite different; it seemed to tell me to get out.

I was on the second floor and there was no way of reaching the stairs in the center of the building as already the walls were beginning to collapse. So I quickly went out on the small balcony. As I stepped out of the door, the railing shot off and the floor started downward with me. The rumble and roar of buildings breaking up is something not soon to be forgotten. I could see our roof coming down, also the British Naval Hospital, across the way, and the theater on the corner were falling. I was thrown to the ground with the balcony floor on top of me which sheltered me from the falling debris."

Although the hospital was totally destroyed, there was none among the staff or patients killed; several injuries resulted but all recovered. The commanding officer, CAPT U. R. Webb, MC, was pinned under the debris of the main hospital building for more than 3 hours before he could be released. His injuries were not serious. Almost total destruction of the city occurred with many fires breaking out following the quake which added to the destruction. Most of the people including the Japanese jumped into the Bay to avoid the fires. Fortunately there were several ships at anchor, notably the Empress of Australia, and the survivors were able to be brought aboard the ships. There were no U.S. Navy ships in the harbor at the time of the earthquake but 4 days later, five American destroyers came in and assisted in evacuating the survivors, mostly to Kobe.

Since for all practical purposes the Naval Hospital, Yokohama, was totally destroyed by the earthquake it was decided not to rebuild and accordingly the facility was disestablished. For several years there had been snide talk throughout the Fleet that the only reason the hospital continued to exist was for drying out of officers and men on rest and recreation trips to Japan from various elements of the Asiatic Station. Whether or not this is true the fact remained as reported by Mr. Randolph, in 1922, the number of patients on board was not enough to justify continued maintenance of the hospital in view of the fact also that hospitals existed in the Philippine islands and on Guam as well as in the American Legation Peking China. The hospital had served the Fleet well but with only rare visitation of Japan by elements of the Asiatic Fleet it was no longer necessary to maintain a hospital there.

YOKOSUKA, JAPAN

Prior to its surrender at the end of World War II, and for many years previously, Japan had maintained a Navy Base at Yokosuka in which, among other facilities, was located the largest drydock in the world. At the end of the war and in the beginning of Allied occupation of Japan, the United States Navy occupied the Yokosuka Navy Yard in support of the Pacific Fleet in that area. To support the Navy Yard and other Navy activities in the vicinity a naval dispensary was immediately established at Yokosuka.

This dispensary which was capable of providing hospital treatment in a limited form continued to expand in the late 1940's until by the early part of 1950 the activity was essentially a naval hospital. Shortly after the beginning of the Korean Incident, in June 1950, the activity was redesignated as a naval hospital. Among the many Medical Department services, in addition to normal routine dispensary services provided, was the conduct of physical examinations on Japanese Nationals seeking employment at the Yokosuka Navy Base. It was reported, for example, that more than 2,800 Japanese had been given physical examinations during 1949. The dispensary also provided considerable dependent's medical attention--both inpatient and outpatient--at the Fleet Activities Dispensary.

During the Korean conflict, the Naval Hospital, Yokosuka, expanded greatly and was the principal naval facility providing medical support in Japan. The continued presence Pacific Fleet in the Orient required the maintenance of the facility as a hospital. When it became evident that the United States and its military components were destined to

remain long in Japan as an Army of Occupation, the mission of the hospital was redefined: "to provide general clinical and hospitalization services for active duty Navy and Marine Corps personnel, active duty members of other Armed Services, dependents of active duty personnel and other authorized persons as outlined in current directives. To cooperate with military and civilian authority in matters pertaining to health, sanitation, local disasters, and other emergencies." Throughout the 1950's and early 1960's the hospital accomplished this stated mission.

With the increase of activities in Southeast Asia in connection with the war in Vietnam, preparations were made to provide additional medical support in this hospital. The first casualties received in Yokosuka from SEASIA were 18 patients admitted during July 1965. The practice--inaugurated early in the Vietnamese War--of transporting casualties by air directly to the United States when these patients were considered to be in need of long-term hospitalization or probable discharge, reduced the expected work load in the Yokosuka facility. Nonetheless, by the end of March 1967 more than 5,000 patients from SEASIA had been admitted to the Yokosuka facility. It was noted in the annual report for 1967 that most of the casualties admitted from Vietnam had been surgical in nature. Medical problems and neuropsychiatric patients had been significantly lower than anticipated.

Between 1965 and 1968 inclusive this hospital received large numbers of patients from SEASIA including as many as 1,087 during a single month. More generally during these years the average monthly admission rate was about 700. By the end of 1969 this great influx of patients from SEASIA fell off considerably. In the first few months

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of 1967 the patient load had been reduced to the point that it was possible to establish the operating bed capacity of the hospital as 450, and even this established capacity resulted in little more than 50% occupancy.

For its service during the period 1 September 1965 to 1 April 1969 in support of the Navy and Marine Corps engaged in combat, the Secretary of the Navy cited this hospital in a commendation, entitling all members attached to the hospital during that period to wear the Navy Commendation Ribbon.

YOSEMITE, CALIF.

This Navy convalescent hospital was commissioned on 23 June 1943 and the first patients were received on 6 July 1943. The hospital was decommissioned on 15 December 1945. Originally commissioned and designated as a United States Naval Convalescent Hospital, it was redesignated on 1 July 1945 as a naval special hospital.

The hospital formerly had been the luxurious Ahwahnee Hotel, owned by the Yosemite Park and Curry Company, it was leased by the Government for use as a hospital. Its primary purpose was for the rehabilitation and convalescence of the sick and injured in order to restore them to duty or to return them to civil life in the best possible physical condition.

The first medical officer in command was CAPT Lloyd L. Edminston, MC, USN.

The hospital complex consisted of 37 acres located in the upper part of the Yosemite Valley in the Yosemite National Park. The setting was magnificent. The hospital was situated on the north bank of the Merced River opposite Glacier Point among tall pines and oak trees. Steep granite cliffs toward some 4,000 feet above the valley floor on all sides. In front of Glacier Point was the famous Fire Fall. Above was the world's famed Half Dome. Below, at the Yosemite Falls, was the massive El Capitan. At the entrance of the valley was a beautiful reflection pool. The main hospital building was of a beautiful reinforced concrete construction and native granite; it was a 6-story building of exceptionally good fireproof construction. In addition, there

were 8 hotel cottages in the adjacent pine and oak groves. The grounds included a sporty but hazardous nine-hole, 800-yard, golf course and two concrete tennis courts. The remainder of the reservation was chiefly meadowland covered with wild flowers.

In the summer of 1943, a recreation hall with a seating capacity of 400 was installed in the former hotel lounge. A single large building, housing a medical storeroom, galley, quarters, and two brig cells were constructed on the former hotel parking lot. Various minor items necessary for conversion to hospital use were also included which included installation of additional lighting in the personnel, and disbursing offices, construction of a fence around the hospital reservation, a small guardhouse at the entrance, and an enclosure for the porte-cochere by the entrance lobby for use as a baggage room. This work was done by the Younger Construction Co. of San Francisco.

In general, the hotel was readily adaptable for use as a hospital, especially one of the convalescent type. With the addition of plumbing and few other alterations there was an abundance of ward space provided. The hotel bedrooms were equipped with private baths and readily could be adapted to ward or other hospital uses. The hotel dining room made an adequate mess hall.

Use was made of the existing spaces for other than the original intention all of which proved to be highly satisfactory for administration and clinical spaces.

The hotel bedrooms and dining room furniture was retained for use in the convalescent hospital. The hotel linen, china, and dining

room silverware was bought for hospital use. The remaining hotel furniture, draperies, pictures, and so forth were placed in storage. The hospital, at first, was intended for use only by neuropsychiatric patients. Experience during the summer of 1943, however, demonstrated that Yosemite was an unsuitable place for such patients. Many suffered from claustrophobia because of the high surrounding cliffs. These patients were unhappy owing to the few diversions available. In September, therefore, the policy of the Bureau concerning patients for Yosemite was changed. It was directed that no more NP patients be sent there and the hospital was to be used for general medical and surgical patients.

There was practically nothing in the way of recreation for hospital staff or patients other than that normally available for visitors to Yosemite. Motion picture equipment was requisitioned but delivery was delayed. There was but a limited amount of essential supplies and hospital beds available. A small number of double-deck hospital beds and mattresses had been requisitioned but not received; there was no special services and no welfare fund. Transportation and maintenance facilities were woefully lacking. Although these were adequate for hotel use, the carpenter, electric and paint shops in the basement were altogether inadequate for a naval hospital. The three car framed garage provided no suitable place for the automobile mechanic to work. Arrangements had been made to use the Lewis Memorial Hospital in the Yosemite valley--a small 12-bed hospital belonging to the National Park Service--for emergency surgery and other similar purposes.

The penthouse apartment on the sixth floor was designated as quarters for the commanding officer when he reported. The fifth floor was the nurses' quarters and the sick officers' quarters but these were soon moved to the fourth floor. It was determined that the hospital could house about 900 patients normally and 1,000 crowded, if they were all convalescents. It was desired to provide housing for families of hospital staff and patients and for the civilian employees but these facilities were in very short supply. Single male and female employees were housed in dormitories by the Yosemite and Curry Company. At first, the attitude of the patients was very bad since they resented being sent to this isolated place where recreational and other facilities were in short supply. The patients resented having to wait months for a medical discharge; they believed they had done their part in the war, had become casualties and were entitled to be sent home instead of being isolated in the high Sierras.

The surrounding community came to the aid of the hospital and cooperated in providing recreational facilities of many kinds including the furnishing of hostesses and orchestras to the hospital for dances. Particularly active in these community affairs were the people of the San Joaquin Valley, including the Elks, Navy Club and War Dads of Fresno, the Navy Mothers Club and Veterans of Foreign Wars. The people in the communities from the San Joaquin Valley from Modesto to Visalia cooperated in every way that they could. The San Joaquin Valley Elks aided in establishing and equipping a hospital hobby shop during 1944, which became the forerunner of the rehabilitation center later established.

The National Park Service and the Yosemite Park and Curry Company also contributed much help in providing recreation and other facilities. The nearest large city to Yosemite was San Francisco, 211 miles away, and the nearest town of any size was Merced which was 81 miles distant. Both were inaccessible for liberty except over weekends. For this reason, the hospital was required to become self sustaining in every way possible.

During the time the hospital was in commission 6,752 patients were admitted. Of these about 65% were returned to duty and the remainder discharged from the Service. The greatest number of patients at any one time was 853.

Since the hospital originally was intended for NP patients, relatively few medical facilities were established in 1943. A large medical storeroom had been completed but contained few supplies. A general-purpose dressing room and a small pharmacy room was established on the first floor but there were no adequate facilities for either general medicine or surgery. A dental office and X-ray room were installed on the third floor. Only the most elemental laboratory facilities were available. The medical staff consisted of commanding and executive officers assisted by two ward medical officers. There were two nurses. Late in 1943, the majority of single hotel beds were removed from rooms and replaced by five double-deck beds in each room. The former in lounge and Tudor lounge were equipped as large wards.

The complement of the hospital was increased to provide an adequate staff but during the fall and winter of 1943-44 there were only three or four medical officers. The hospital was reported ready to receive its full capacity of patients in November 1943 and by the first of

December there were more than 700 patients on board.

Although the Lewis Memorial Hospital Yosemite had been used in the first few months for patients requiring surgery this arrangement was unsatisfactory. Although patients were not sent to Yosemite for surgery, acute surgical conditions frequently arose among staff and patients. A surgeon and operating room equipment was not received until June 1944. A year after being commissioned the hospital was equipped to care for practically any type of general medical or surgical patients. No attempt was made to provide special department such as eye ear nose or throat or neurology but because a number of orthopedic patients had been sent to the hospital early in 1945 a special cast room for application and removal of plastic casts was constructed outside of Ward A on the first floor.

Housing for families were always inadequate although some residences belonging to the National Park Service, temporarily vacant because of wartime reductions in park personnel, were loaned for use of families of officers and men of the hospital staff. The Ranger Club was utilized as a bachelor officers quarters and rooms there assigned to unmarried officers or to those whose families were not in the park. Six houses and apartments belong to the Yosemite Park and Curry Company and normally occupied by their employees were rented to Navy personnel. Two apartments belonging to Best's Studio also were temporarily rented to Navy personnel.

Transportation posed a serious problem throughout most of the time the hospital was in commission. There was no regularly-assigned ambulance until March 1945. The motor pool consisted of a Plymouth sedan, a pick-up truck and a larger truck; the pick-up truck was converted to and used as an ambulance although it was quite unsatisfactory, particularly for the transportation of seriously-ill patients. The larger truck was fitted with a home-made canvas cover, which though unsatisfactory, provided shelter from the elements in transporting personnel and supplies. As a part of the recreation facilities some staff and patients were permitted to engage in skiing on mountains some distance from the hospital. In the event of injury, the available motor vehicles were highly unsatisfactory in transferring them back to the hospital. Near the end of the war, two 25-passenger busses were procured which alleviated the transportation problem to some extent.

In the first several months of the hospital operation it was ironic that this facility, intended for rehabilitation and convalescence, still had relatively little recreational facilities. Pitching horseshoes, playing softball, golf, or tennis covered the range of activities at first available. There were some supervised hikes about the valley and on the mountain trails. Bicycles and horses could be rented in the community and movies could be seen by traveling to the old village theater about a mile and a half away, twice a week. There were a few dances held in

the community but even those were reduced to two a week during the winters and music was provided in the cafeteria with a phonograph. Since the hospital was in such an isolated location it was normally off the beaten track of entertainment groups that normally visited various military activities. Transportation was so difficult that few entertainment groups visited the hospital until after the early part of 1944.

In the beginning there was no ships service and consequently no welfare and recreation fund. Two pool tables were donated and a third one was purchased in early 1944 which provided some diversion. After the middle of 1944, transportation facilities had been improved so that some entertainment units including the USO Blue Circuit began to appear regularly at the hospital. A hospital newspaper "The Ahwahnee News" contributed to the development of morale and after its establishment in December 1943 was published monthly until the end of the war.

No library existed at the hospital until early 1944. Beginning with some books donated by students of the Fresno State College, a library was started and by mid 1944 some 3,500 volumes had been acquired. Bowling alleys were installed in January 1945; the six alleys were made possible by a donation from the Bay Meadows Race Track of the California Jockey Club who donated \$5,000 to the Hospital Welfare Fund for this purpose. Additional pool tables were acquired, a small physical training building with gymnastic equipment was procured in March 1945 by which time the recreation program had improved materially. The sale of beer in ships service was authorized by SECNAV in the spring of 1945-- the only naval hospital in the United States where this permission had been

obtained. Sales of beer was permitted every night, following this authorization. It was reported that this authorization brought the general morale of the hospital to a very high status. There was plenty of recreation now as well as work indoors and out all year long and all the patients were busily occupied. Dances were conducted almost every week; the USO and other shows provided at least semi-monthly entertainment; movies were shown five nights a week and a home-talent happy-hour program plus the sports activities available, provided the great majority of patients the pleasant and beneficial atmosphere in the hospital. The reputation the hospital had acquired during its first year was a difficult one to live down, but in 1945 the commanding officer was able to report, "no patient at this hospital has a real cause to complain for lack of recreation; sufficient variety and amount is available for all."

Occupational and physical therapy was concentrated upon following the first year of improvisation and by the end of the war there were activities of one sort or another to interest practically every patient on board. The educational services program, handicapped by lack of books and equipment in the beginning, by the end of the war had developed into such a popular activity that at one time the average enrollment was more than 500 men.

The hospital was decommissioned 15 December 1945.

BASE HOSPITAL, NO. 1 BREST, FRANCE

The personnel for this hospital in France sailed from the United States on USS HENDERSON in September 1917 and landed in France 5 October 1917 at St. Nazaire. This hospital was especially established for support to the marine corps then operating with the Army on the western front. This hospital was the first navy base hospital fully equipped for operation in France and it was one of the earliest hospitals established with the expeditionary forces.

The original intention was to establish a 500 bed hospital but sufficient personnel were provided so that expansion could be accomplished to provide a 1,000 bed hospital. The commanding officer, executive officer, the pharmacist and four chief pharmacist mates were members of the regular navy, the majority of the remaining navy personnel were members of the naval reserve force.

The hospital was established primarily in support of the marine corps but was assigned to duty with the American expeditionary forces and the commanding officer reported directly to the commanding general of the AEF.

For a short while following the arrival of France there was some doubt as to where the unit would be sent to be set up. An effort was made to have the hospital accompany the marine detachment and serve with them in the zone of advance. However certain urgent conditions arose during that time at Brest, France and after spending a few weeks of inactivity the unit with its equipment was transferred to Brest.

On 19 November 1917 Army authorities the Petit Lycee in Brest this building having been obtained from the french authorities by the Army. This Navy base hospital unit was immediately assigned to the building and began cleaning it up to prepare it for occupation. At the time it was still in use as a French hospital and contained some french patients. The building was dirty and insanitary in every respect with inadequate water supply and very primitive

toilet facilities. The preparation of the building to conform to navy requirements as a hospital was begun immediately and general innovations were instituted by our own personnel. The installation of an additional plumbing, toilet facilities, electric ~~wire~~ wiring, and lighting and various carpenter alterations were immediately begun.

One wooden barracks later supplemented by tents was erected and gave the hospital a capacity of 500 beds although during emergencies many as 750 were accommodated by using verandas, balconies and hallways. The heating of the building was accomplished by 46 small stoves. Members of the hospital corps were accommodated in the attic. Few of the nurses lived in hospital buildings while the remainder occupied quarters in a convent nearby. The location of the hospital was ideal being in the center of the city. It was convenient to the water front and therefore the most serious patients brought ashore were delivered here thus escaping the discomfort prolonged transportation to other hospitals.

There was a large mess hall in the building used by patients and hospital corpsmen. The galley was close by and considered to be adequate. An excellent bacteriological and pathological laboratory was equipped and occupied two rooms of the building. The operating rooms and X-ray rooms were well equipped. The operating room was well lighted and adjoined the X-ray room. There was a special diet kitchen under the management under one of the nurses with a french civilian as an assistant. About 30 french civilians who worked as maids scrubwomen and so forth were employed by the hospital. The wards of the home were well lighted and received sun whenever the sun see fit to shine. One of the wards was in the chapel which accommodated about 80 beds. The other wards contained 40 beds or less. There were a few small rooms used as sick officers quarters. A small ~~ward~~ ward of 8 beds was available for sick nurses. The hospital served as a base camp convalescent and evacuation hospital. A number of french civilians injured by automobiles and also numerous welfare

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workers, both male and female were admitted during the time the hospital was in operation. At times as many as 250 to 350 patients from Army hospital trains were received on short notice. Evacuation at first was directed to ships but later all evacuation was accomplished through a central evacuation hospital known as Kerhuon. The transportation was furnished by the Army ~~ppx~~ pool ambulance corps. ~~During the~~

During the time the hospital was in operation various operating teams were sent from the hospital to the front to serve with elements of the Army. ~~Thexixxx~~ These teams consisted generally of a surgeon and an assistant, two nurses, and a hospital corpsmen who did excellent work. At times nurses and hospital corpsmen were detailed to other hospitals in France.

The hospital was first under the command of CAPT Luther L. Von Wedekind who was relieved some time later by CDR Charles M. Oman. The executive officer was LCDR Eugene A. Vickery.

This hospital was one of two base hospitals located at Brest during World War I. The other was known as base hospital No. 5.

Although established basically in support of the marine corps as circumstances dictated this hospital was used more for the care and treatment of Army personnel. It was decommissioned in 1919 after the majority of personnel of the AEF were returned home at the close of the war.

BASE HOSPITAL NO. 1 LONDENDERRY, IRELAND

This base hospital designated No. 1 is not to be confused with the hospital of the same designation located at Brest, France in World War I. This hospital was located at LondNDerry, Ireland in World War II. It was established on 3 April 1942 and decommissioned on 2 September 1944. It was established as a 300 bed hospital.

^P
STRATHJEFFER, SCOTLAND

This hospital, known as Navy Base No. 2, was organized at Stanford University with Dr. Stanley Stillman as director of the unit and Dr. A. W. Hewett as his assistant. This unit originally was enrolled in the Red Cross early in 1917 and subsequently enrolled in the Navy during July and August of 1917. After organization and training in Philadelphia, the Unit sailed for Liverpool, 20 January 1918. CAPT E. S. Bogert, MC, USN was placed in command with CDR C. G. Smith, MC, USN, as executive officer.

The hospital originally was intended to provide service for the personnel of the Navy, but the concentration of allied vessels in combined military operations made it necessary that the needs of both American and British ships be supplied with medical attention. The location selected for the hospital was determined after consultation with the Medical Department of the British Admiralty and strategic needs pointed to the vicinity of Moray Firth. Strathteffer was selected as being in direct railway communication with the ports where ships operating in the North Sea could most conveniently land sick and wounded. A number of buildings commandeered by the British Government, under the Defense of the Realm Act, were carefully considered and finally those at Strathjeffer were chosen as being situated in a well-watered valley where the climate was somewhat less severe than that generally prevalent and having ample suitable water and being readily convertible to the purposes of a hospital.

The four large buildings, originally hotels or hydrotherapeutic establishments, accommodated the needed surgical and medical wards, operating room, laboratory, X-ray room, the nursing force, the commissary department, and the articular services, which were necessary as the result of the remoteness from a large city. The adjacent grounds and those placed at the disposal of the hospital by the Countess of Gromarty afforded ample opportunity for out-of-door recreation at tennis, croquet, baseball, and football, while in the nearby buildings rented by the YMCA, educational religious and recreational undertakings were carried on with vigor. Professional service to patients was conducted by surgical, medical, orthopedic, hydropathic and neurologic divisions, each in charge of an expert in his specialty. During the calendar year 1918, the total admissions were 2,182. Of these, 777 were men of the United States Navy, 1,002 were men of the British Navy and 402 of the British Army. Of this total, 1,288 patients came to the hospital by means of British Army or Navy submarine trains. The total number of surgical operations was 946. The hospital remained in commission until 1919, when it was turned back to British authorities.

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BASE HOSPITAL NO. 8

Base Hospital No. 8 began as mobile hospital No. 2. It was commissioned in August 1941 in New York City. Shortly after commissioning the hospital was transported to Pearl Harbor where it was constructed on Halawa Heights.

Even though in process of setting up it was possible to receive patients on 7 December following the attack by the Japanese on Pearl Harbor. The hospital continued to function and expand until 31 October 1943 when it was decommissioned as mobile hospital No. 2. On 1 November 1943 base hospital No. 8 was commissioned and the personnel from mobile hospital no. 2 were transferred to base hospital No. 8. The ~~huts~~ buildings grounds supplies and equipment of mobile hospital no. 2 were transferred to the naval ~~hosp~~ hospital no. 10 Aiea Heights. This latter hospital had recently been constructed adjacent to mobile hospital no. 2.

McGrew Point was the site selected for the construction of base hospital no. 8. The first patients were admitted on 20 January 1944. Base Hospital No. 8 is an activity in the 14th naval district. McGrew Point is a triangular point of land on the northeast border of Pearl Harbor more recently known as the Cooper estate. The hospital wards and most of the living quarters ^{huts.} are constructed of sheet metal known as quonset ~~huts~~. The officers club and nurses quarters were formerly the home of the Cooper family who lived on McGrew Point before it was taken over by ~~the~~ the Navy. The enlisted personnel are quartered in huts similar to the officers with sufficient head and shower space to accommodate those using the quarters.

During 1944 10,783 patients were admitted a number increased to 11,032 patients in 1945.

BASE HOSPITAL NO. 9, ORAN ALGERIA

Base Hospital No. 9 was commissioned 19 November 1943. It was set up and functioned at Oran, Algeria. Its purpose was to provide support to navy marine corps and army units in north Africa and the Mediterranean during World War II.

The hospital was a separate command and a part of ~~CDR~~ commander naval forces northwest African waters. It was a unit of the operating base Oran, Algeria. The peak load of patients was reached on 31 January 1944 when 128 were under treatment. The hospital was located on the east side of a ~~low~~ sloping hill on route nationale No. 2 at point albin approximately 6 miles from downtown Oran. The surrounding area for a radius of about four miles was entire malarial free. The area was considered ideal because of a constant breeze from prevailing winds which ensured better than average working conditions through the day and the cool nights ensured excellent sleep. The biggest problem was the constant dust storms which made keeping the equipment and facilities clean/^avery difficult task. The hospital was constructed essentially of quonset huts. The hospital was decommissioned on 30 September 1945.

BASE HOSPITAL NO. 10

Base Hospital No. 10 was located in Sidney, Australia during World War II. The hospital complex at originally been constructed and occupied by the Army. The navy base hospital no. 10 became operational on 4 December 1943.

The construction of the hospital was of the standard army wooden type for forward areas with connecting corridors. Since navy occupation the interiors of the building have been lined with camite and ~~asbestos~~ asbestos boards with gas heating system installed. The mess halls and galleys were remodeled by installing concrete decks and ~~electric~~ electric equipment; garage with a shop and tennis courts were built by the Navy. A eight foot high fence was also constructed by the Navy.

Normal replenishments of medical supplies were from either Oakland or Brooklyn. A process that takes approximately 6 months for delivery. In case of emergency medical supplies were also available from Army storehouses in Australia. Evacuation of patients generally accomplished by hospital train to Brisbane and occassionally by ship to Sidney or Melbourne. Laundry facilities are not available on station but laundry is done by civilian contract. Through December 1944 3,628 patients were admitted 2,712 of whom were returned to duty, 786 transferred to the United States and there had been 10 deaths. Food supplies were obtained from the Army through the ~~and~~ navy medical supply depot in Sidney. The hospital was rated as a 500 bed hospital and was decommissioned on 25 September 1945.

BASE HOSPITAL No. 11 MUNDA, FIGI ISLANDS

This hospital unit was organized as a component part of Cub three later designated as base hospital no. 11. The original organization began on 1 September 1942 when 25 medical officers, 2 dental officers, and three hospital corps officers reported to the unit in Moffett Field, California. The senior medical officer of the unit was CAPT Carlton I. Wood, MC, USN and LCDR Samuel C. Lind, MC, USNR was executive officer.

The original organization plan envisioned a large unit composed of a number of different departments whose mission was to be determined at some future date. The medical department was set up to operate a 200 bed hospital and a number of satellite dispensaries in connection with various organizational departments of the unit depending upon the location at which cub three was to be assigned. The personnel assemblage was immediately started at Moffett Field and requisitions were prepared for medical stores and equipment to be obtained from the medical storehouse at Oakland, California. The organization phase was typical of many of these units in that time hung heavily upon the hands of the medical and dental officers and hospital corpsmen. The planning units of the navy department knew that ~~sm~~ certain types of advance base organization would be required in the island warfare in which the navy and marine corps were involved. Exactly what the requirements would be and how many of this type of unit would be required no one knew in advance. All that was known ~~that~~ advance bases and hospital facilities would be required as the scene of action moved from island to island. It would be required that navy bses and port facilities and hospital facilities would be needed to support the fleet and the marine corps.

Sometime was devoted to lecturing and training of both medical officers and enlisted men in some of the things that they could be expected to encounter when they would be transported overseas. Even with these extensive training

sessions there still remained very little for the personnel to do.

On 7 April 1943 the first echelon of cub 3 sailed for the southwest Pacific and this first group was followed shortly by the second and third echelons. The medical personnel were divided equally between the first two echelons with the exception of a small detachment coming with the third. The entire unit of cub three was landed at Figi at Vunda Point on the island of Viti Levu. A temporary camp was made and set up during the rainy spell and much of the equipment was soaked thoroughly when stored on the muddy ground. All personnel were housed in tents and all of the utility spaces were also of canvas. The medical department was ~~established~~ established in a separate camp from that of the remainder of the unit. A small 40 bed ~~dispensary~~ dispensary was ~~built~~ built of framed screened tents with wooden decks and adequate operating room set up. The climate was ideal and the location well suited for camp. Inactivity again became a problem but recreation activity were more plentiful. Soft ball was a favorite of the men. Didactic instruction was continued to better prepare the personnel for their duties.

In May two medical officers and 38 hospital corpsmen were detached and ~~in~~ ordered to duty with the 4th navy construction battalion. While attached to that unit these men participated in the rendova and New Georgia landings. After the landing this unit was established at New ~~Georgia~~ Georgia and the personnel reattached to the base hospital 11.

During the first three months after landing at Figi relatively little activity occurred in the base hospital. The more serious medical cases were sent to the seventh evacuation hospital u.S. Army which was located nearby and which had more elaborate medical facilities. Various elements or departments of cub three were detached and sent to various locations on the island or on other islands and it became evident that cub three was not ² to function as a large base unit but that different activities would be created

and sent to where they were immediately needed as separate groups. It was necessary to provide dispensary or sick bay facilities with each of these satellite units.

In August orders were received to divide the medical personnel and its supplies and equipment into two units each to be ready to move out and establish 100 bed hospitals at undesignated location or locations. Accordingly all materials and equipment were divided and marked respectively hospital 1 or hospital 2. Many of the containers were badly damaged in ~~xxxxxx~~ transport and were repaired and ~~supplies~~ supplies packed as well as possible. On 1 September the equipment and stores were embarked at Figei accompanied by a detail of four officers and 40 enlisted men. On 12 September the remaining officers and men embarked and both groups were ordered to stop at Espato Santos for inspection of the hospitals already established there to obtain ideas that might be helpful in directing its own units hospitals. The first contingent with its cargo reached Guadalcanal on 13 September 1942 and the second group arrived on 23 September. In the discharge of cargo some was lost overboard and many of the ~~xxxxxx~~ crates were additionally badly damaged. After unloading on the beach all the material had to be transported by truck to a supply dump another move which did not help the equipment and supplies to any extent. The staging time in Guadalcanal was so short that no time was spent in visiting hospitals or medical activities. Hardly had the supplies and equipment been unloaded when orders were received to proceed to Munda New ~~Georgia~~ Georgia and report to the commander naval base there to establish one hospital. On 25 September the bulk of the officers and men sailed for New Munda with part of the supplies and equipment. A small detail remained behind to accompany the remainder of the stores. This detail arrived a few days later with more of the material and supplies. The remainder of the supplies came along at intervals of several weeks. The necessity of again

loading and unloading the equipment left many of the crates in very bad shape and many items were ruined or damaged seriously.

On 26 September the stores and equipment began to be unloaded on the beach at Muda. A temporary camp was established near the beach and all personnel were quartered there. After two days the permanent ~~xix~~ hospital site was ready for occupation and the trucking of stores to this area began. At the same time ~~on~~ the 24th SEABEES battalion started construction of the hospital. On this date the unit was under orders to establish a hospital before ~~specific~~ a specified date to be ready to operate and participate in the impending military operation. Three large rudely constructed hospital wards were built of 9 hospital tents screened and provided with wooden decks. Mess halls were similarly built and a galley and surgical unit of quonset huts was started. As tents were erected space became available officers and men gradually moved from the temporary to the permanent location. By the middle of October a change in plans who were handling casualties from the then starting offensive was made. It was planned to have casualties bypass this island and go elsewhere further away from the scene of battle. This unit was to build up as a hospital to care for navy and marine corps personnel in the area and only to receive casualties who might reach the area in the course of upsets in flight and ship schedules.

Since plans were in flux the construction of the hospital proceeded somewhat leisurely with a definite scheme for an efficient well constructed hospital planned it was hoped that by the time demands were placed upon this hospital more comodeous accommodations would be available. As the building construction progressed various representatives of the force medical officer visited the unit and made various recommendations to commander South Pacific. The latter recommended that a hospital of 300 beds be constructed

and this hospital be commissioned as a separate command and designated as a navy base hospital. During all of these moves and changes of plans construction progressed with all officers and men working as hard as any man ever worked. Too much praise can not be lavished upon them. They did manual work from sun up to sun down and did practically all of the manual labor in the construction of the hospital. The SEABEES did the technical work but the dirty hard physical labor was done by the hospital corpsmen. Only a hand picked group could have accomplished all they did and all were inviewed ~~with~~ with the spirit that ~~we~~ were ready at last to fulfill the mission as a naval hospital.

On 29 November 1943 the first patients were admitted from then on the census rapidly mounted. Construction continued as expansion of the hospital facilities was needed constantly. The first bases built were for the occupancy of patients except for a few ~~xxxxx~~ storage huts and only after such structures were finished then were utility huts erected. The first crude canvas structures were really glorified casualty and first aid stations and were abandoned as permanent hospital wards as soon as those wards were provided.

During this period from late fall 1943 until January 1944 the unit was designated as United States dispensary advance naval base new Georgia. On 16 January 1944 the unit was redesignated as naval base hospital No. 11. The hospital consisted primarily of quonset huts joined together end to end or at 90 degree angles forming inter connecting units.

The location of the hospital was such that the area was constantly subjected to night flying bombers but fortunately none fell in the hospital complex. At the same time, however, the red alerts occasioned by the bombing attacks interfered frequently with the work of the hospital. On 13 January 1944 during the course of bombing attacks bombs fell within about 200 yards of the hospital area. 5

The hospital was decommissioned on 15 December 1944 dismantled
and forwarded to enlarge base hospital no. 17 at Hollandia.

BASE HOSPITAL NO. 13 MILNE BAY, NEW KINNA GUINEA

The base hospital No. 13 was located at Milimoi Mission on Milne Bay. In December 1944 the advance of United States forces had been so rapid that consideration was being given to disestablish this activity and utilize the army hospital for necessary medical ~~xxx~~ attention in the area.

BASE HOSPITAL NO. 14 FINCHAVEN, NEW GUINEA

Base Hospital No. 14 started as a G 6 component augmented to a 300 bed capacity and further expanded to 400 beds. In December 1944 232 beds were occupied. The mission of this hospital was to provide medical support for garrison force of 2,000 plus personnel on ships on the harbor as well to care for casualties evacuated from forward areas. The construction was of quonset huts.

BASE HOSPITAL NO. 12 NETLEY, HANTS, ENGLAND

This hospital was commissioned 15 March 1944 and ~~disestablished~~ disestablished
30 September 1944.

BASE HOSPITAL NO. 15 ^{MANUS} ~~MANICE~~ ISLAND

This hospital similar in construction to most of those in the south Pacific was of quonset huts. It had a basic capacity of 1100 increased in December 1944 to 1525. This hospital was on the direct route as a staging point for casualty evacuation from the attack on the Philippines. Base Hospital No. 15 was decommissioned on 22 January 1946.

BASE HOSPITAL NO. 16 WOENDI SCHUOETIN ISLANDS NETHERLANDS EAST INDIES

This base hospital was established 21 September 1944 and disestablished 12 November 1945. This hospital was characteristic of hospitals constructed in the tropics areas and generally was constructed of quonset huts.

BASE HOSPITAL NO. 17 HOLLANDIA

Hollandia was an important navy base in the advance toward the Philippines and the western pacifics. The hospital supported approximately 15,000 men ashore and up to 55,000 men aboard ships at anchor at the harbor. Hollandia was an important staging point for the attack on the Philippines and as a point in the evacuation chain of casualties from the Philippines.

Originally established as a 250 bed hospital it was necessary to maintain a bed capacity of 1500 in as much as frequent evacuation of large numbers of patients required be ready available of large numbers of beds.

Originally the hospital was a ~~separate~~ component part of cub 10 which left the United States in 1943. The start of construction on this hospital at Hollandia was on 7 August 1944 with 200 beds available on 15 September. The hospital was officially commissioned on 3 October 1944 and shortly thereafter 500 beds were available. The peak load of patients by the use of crowding into cots was 612.

Early in 1945 it was necessary to increase the bed ~~expri~~ capacity by March the total beds available was 1127. The total number of patients treated during the time the hospital was in operation was 8,726. The hospital was decommissioned 20 October 1945.

BASE HOSPITAL NO. 18 GUAM

Base hospital no. 18 was established at Guam on 24 October 1944. It was rated as 8,000 bed hospital at first but an inspector medical department activities in 19 June 1945 reported it as having a capacity of 2,618 beds.

This hospital was one of several established in the Marianas Islands in the latter ~~months~~ months of the war in support of anticipated heavy casualties to be received by the direct attack upon the Japan home islands. Fortunately many of these hospitals were never utilized to their full capacity although base hospital 18 was in operation long enough to perform considerable medical support to the fleet and marine corps action.

CAPT R. H. Laning in his report of inspection of base hospital No. 18 dated 16 June 1945 pointed out that the organization of base hospitals placed them somewhat at a disadvantage compared with fleet ~~hospitals~~ hospitals. He suggested that since the base hospital organization was originally conceived to be as a component part of an advanced base organization the medical department and its included ~~hosp~~ hospital was dependent upon the construction and maintenance support of the advanced based commander. This organization Dr. Laning said was very good except that in most instances the original concept of organization was modified considerably after establishment at overseas points. With the splintering of departments in the original organization it was a general practice to divorce the hospital from the advanced base organization. As originally conceived a construction and maintenance force was provided for the hospital but when it became a separate unit these personnel most always were removed causing the need for medical department persons often inexperienced and certainly untrained as artizans to shoulder the responsibility for the maintenance of the hospital as

well as to provide medical services. This weakness Dr. Lening said was not apparent in the fleet hospital organization since the concept of organization from the beginning provided for these maintenance personnel. As a consequence in actual operation a base hospital with 200 bed capacity might for example have a total personnel on board of two to three hundred less than the fleet hospital with the same bed capacity. The fleet hospitals in each instance would have special allowances for machinests, electricians and other specialists for maintenance which the base hospitals often did not have and were required to go begging to other commanders for the loan of these personnel. Base Hospital No. 18 was decommissioned on 31 December 1945.

BASE HOSPITAL NO. 19 TINAIN, MARIANA ISLANDS

Base hospital no. 19 was located on the island on Tinain Marianas Islands. The original personnel were assembled at San Bruno, California on 13 June 1944 destined to become part of the organization then known as a U.S. Naval advance base LIRP-57. This unit under the command of CAPT Frederick W. Motter, MC, USN were ordered to report on board the transport SEAWICH at Oakland, California for transportation to Pearl Harbor. This unit failed on 20 June 1944. The original medical contingent consisted of 28 medical officers, 2 dental officers, 6 hospital corps officers, 222 hospital corpsmen and 65 non medical rated enlisted men.

The unit debarked at advance base reshipment depot IROQUOIS point Oahu, Hawaii on 2 July 1944. After training period devoted to camp construction rifle practice and lectures related to personnel and camp hygiene and sanitation in the forward area the unit went aboard the USS SANTAMINOCA for transportation to Tinain, Marianas Islands on 23 July 1944. On 14 August 1944 ~~they~~ the unit arrived in the harbor of Saipan, Marianas Islands. Since supplies and equipment were not on board the unit remained on board ship until 18 September 1944. During that interval three medical officers and 37 hospital corpsmen were transferred ashore for temporary duty at headquarters ~~in~~ island command Tinain. The property and supplies for the hospital arrived on that date that is 18 September 1944 and preparations were begun to unload the supplies ashore on Tinain. A temporary camp site was prepared immediately. The temporary camp site was situated in a grove of small trees ~~with~~ with the remains of dwellings formerly occupied by the Japanese being utilized for housing purposes. A galley and mess hall a sick bay an officer of the days' office a personnel and record office and other necessary ~~facilities~~ facilities were provided. Fox holes and bomb shelters were dug and a security guard was established since many Japanese troops remained in the surrounding area. During an air raid on the night of

7 November 1944 the temporary camp was strafed by machine gun fire. Fortunately there were no casualties. Shortly thereafter a Japanese soldier who had wandered too close to the camp was shot by a guard and this soldier was found wounded and still alive. On another occasion three Japanese with a light flag surrendered. Several medical officers and hospital corps officers as well as enlisted men ~~XXXX~~ work in various dispensaries on the island. Tuberculosis survey was made of the natives at Camp Churo and a county medical society was organized. The island had a native population of about 11,000.

First priority was given to the construction of roads and air fields. This caused some delay in starting some construction of the hospital. However the arrival of troops on the island in increasing numbers made the need for hospital immediately apparent. On 8 October 1944 ground was broken for a hospital site located in a field of sugar cane approximately 26 acres. The hospital was constructed by the 92nd Seabee brigade. In order to expedite construction of the hospital living quarters for officers and enlisted men were erected nearby. The officers and men uncreated and ~~MM~~ installed the hospital equipment built necessary shelving board walks and other accommodations. A target date of six weeks for construction was established which appeared to be a large undertaking. However it was accomplished by the diligent work of the Seabees and the hospital corpsmen who toiled seven days a week often twelve hours or more daily. The original bed capacity of the hospital was established at 600 but soon was increased to 1,000 beds.

The first patients were admitted on 1 December 1944 at which time the military population of the island was 25,300. Within ten days the patient census rose to 315.

The hospital was located less than a mile from west air field and the

danger of bombing was obvious. There were several concrete cisterns along the eastern boundry of the hospital reservation which had been used by the japanese for the storage of rainwater. An opening was made in one side of the cisterns to serve as an entrance and provided drainage the top was covered with sand bags supported by railroad ties which resulted in a very ~~surfix~~ serviceable bomb shelter. One of these bomb shelters was used for an emergency surgery. In addition to the bomb shelters for ambulatory patients and hospital personnel it was necessary to provide fox holes which were surrounded by sandbags. The top soil on Tinain averages from six inches to a foot in depth above the coral base air hammers were required to dig these fox holes. During an air raid the bed patients were placed on mattresses beneath their beds. A Geneva Cross 20 ft. by 20 ft. with a white background was painted on the roofs of several buildings. Several air raids were sustained during December and January but fortunately the hospital was not bombed and no bombs fell near the hospital complex.

The hospital functioned to receive patients from all services until March 1945 when the Army set up the 374th general hospital.

Navy nurses reported on 20 January 1945. By 18 August 1945 the number of military personnel garrisoned on Tinain had reached a peak of 54,863. During the period from 1 December 1944 through 31 August 1945 a total of 5,347 patients ~~exxx~~ were admitted to the hospital for treatment. At first Dengue fever was epidemic in the early period large numbers of the military ~~np~~ population were stricken with this disease. In ~~xxxx~~ September 1944 a military population of some 18,916 were on the sick list with dengue. By March 1945 not a single patient was on the sick list. There ~~xxxx~~ were no admissions to the sick list for dengue after March 1945. Amebiasis was prevalent among the native population but no known cases among ~~military~~ navy personnel were reported. The hospital was disestablished on 30 November 1945.

BASE HOSPITAL NO. 20 PELELIU

This hospital was formed in accordance with a COMSIRPAC dispatch of 15 August 1944 which ordered 34 officers under CAPT C. R. Riney, MC, USN to report to the Russell Islands for duty. On 30 September 1944 the first echelon of 17 officers and 223 enlisted men arrived on Purple Beach at Peleliu in the Palau Islands. The remainder of the personnel followed soon ~~thereafter~~ thereafter. This unit was designated on 14 November 1944 as navy base hospital no. 20. The first hospital unit constructed of quonset huts was occupied on 21 December 1944 and patients who had been cared for previously in tents were transferred to the new accommodations. The hospital was completed on 24 February 1945.

During construction of the hospital it was discovered that the site
by the
had previously been used ~~as a~~ ^{by the} japanese as an ammunition dump. In excavation
for various buildings several 500 pound bombs and drums of gasoline were
uncovered. Fortunately none of these exploded.

BASE HOSPITAL NO. 21

Base hospital no. 21 was established on Kwajalein in support of the naval air base on that island. Kwajalein had been an island held by the Japanese. United States forces first attacked the island on 1 February 1944 on 4 February RADM A. D. Bernhard and his staff including three chief pharmacist mates went ashore and established a ~~temporary temporary temporary~~ temporary camp site. On 7 February an additional medical unit consisting of 1 medical officer and 6 more hospital corpsmen came ashore. By 27 March 1944 a 150 bed army station hospital was functioning on the island. The Army provided the major hospital services from the original invasion until November 1945 when base hospital no. 21 was established. This hospital continued to operate in support of the navy air base until 1 October 1946 when it was disestablished. During the army occupation the navy operated several dispensaries in support of the navy forces ashore and in the harbor. The island was used by the navy as headquarters for the Marshall Islands command.

BASE HOSPITAL NO. 2 EFATE, NEW HEBRIDES

This World War II base hospital No. 2 was organized in the 12th naval district with 33 medical officers, 2 dental officers and 4 pharmacists comprising the officer personnel. There were 239 hospital corpsmen forming the remainder of the roster. Organization was accomplished in the last week of March and the first part of April 1942. Only 6 of the 39 original officers were of the regular navy. The remainder were members of the naval reserve largely from units in Dayton, Ohio and St. Louis, Missouri.

The hospital was designated for establishment at Efate code name roses and preparations for sailing were accomplished early in April 1942. Hospital personnel with all its supplies and equipment departed from San Francisco in convoy. During the trip classes in tropical medicine and war medicine were conducted for medical officers and hospital corpsmen. Organization and assignments of personnel were completed on board before landing. The convoy reached its destination on 4 May 1942. This base hospital was the first to be established in the south pacific and the construction of the hospital facilities required the labor of all members of the hospital staff. Members of the SEABEES also provided construction assistance. Unloading operations even though being performed by inexperienced personnel were accomplished rapidly and more than 40,000 tons of cargo were discharged without a single person sustaining an injury.

While unloading operations were progressing a survey of conditions were made ashore so that a temporary hospital and living quarters could be provided until the buildings to form the permanent hospital could be erected. There were a few buildings on the island suitable for hospital purposes including a small civilian hospital a courtg building a church and 8 residencies. These buildings provided space for 450 patients and the housing of the hospital staff. The temporary hospital was in operation on the day following the first landing and was continued in use until 18 September 1942. A major share of the

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construction was accomplished by hospital corpsmen under supervision of officers of the SEABEES. The new hospital was commissioned on 19 September 1942 at which time 387 patients who had been accommodated in the temporary hospital building were moved to the new structure. Tlx

The hospital complex was essentially composed of quonset huts. The island on which this hospital was located was of medium size. The basic formation consisted of lava under stratum covered with coral and a top soil of rich humas. The vegetation was entirely tropical and a large protion of the island was covered with dense jungle. There were several mountain ranges reaching an elevation of more than 2,000 ft. nearly half of the population resided in or near the small town of Efate. Scattered over the island and particularly along the shore were numerous large plantations owned by foreign nationals. The chief products of the islands were copra, cocoa, and coffee. Most of the laborers on the plantations were tonkinese (indo chinese) who worked on a contract labor basis.

The naval hospital occupied 60 acres of a coconut plantation at an elevation of approximately 500 ft. above sea level. It was located about 2½ miles from Efate and its harbor. The terrain was rolling and the top soil of clay and humag was several feet in depth. This formation did not provide natural drainage and made the construction and maintenance of roads and drainage ditches and difficult continuous problem. The principal roads were constructed with coral the only road building material available. This type of construction required constant upkeep. Suitable drainage ditches for handling the surface water resulting from terrential rains had to be constructed.

The original commanding officer of the unit was CAPT John E. Porter, MC, USN with CAPT Frederick W. Muller, MC, USN as executive officer. The commanding officer served with additional duty as base medical officer with jurisdiction over all navy medical department activities on the island.

~~Upon the~~ Among the problems encountered in personnel and record office procedures was the shortage of typewriters and the absence of a navy filing manual. The shortage of typewriters was overcome by placing a night crew in the record office and by borrowing typewriters from other departments which functioned only during the day. This procedure enabled the records office to keep up with routine admissions and discharges but delays were encountered on evacuation days. Originally evacuations occurred every ten days to two weeks and averaged about 500 patients each time. Even by keeping the medical history writeups up to date the difficulties were still encountered when only a few hours advance notice of evacuation was received.

Battle casualties were received by air ambulance from the combat area from the beginning of the Guadalcanal landing on 7 August 1942 until September 1943 when the last air ambulance with 8 casualties from the forward area arrived. After September 1943 casualties from the forward area bypassed this hospital for other hospitals further south. The Army maintained the 48th station hospital of 500 bed capacity on the island and it was decommissioned on 19 December 1943. After that date the base hospital No. 2 provided hospital facilities for all personnel remaining on the island and all fleet activities in the area.

Efate had been traditionally classified as an un^Ahealthy island. There was a rainy and dry season, with the rainy season extending ~~from~~^A November to May with a mean annual rainfall of approximately 90 inches. The chief disease is malaria and the whole population is invariably malarious. No malaria control had been attempted prior to the arrival of the United States forces. The only vector of malaria on the island is anopheles punctulatus variant molluccensis swell. Pest mosquitoes including both colux and aedes were in great profusion. No actual cases of filariasis had originated on this island and dengue is rare.

Malarial control measures were immediately established on arrival on the island. Each unit maintained its own malarial control officer with ~~and~~ a small staff. Base malarial control unit consisting of two malariologist^A_n two entomologist and a civil engineer with approximately 25 field and laboratory technicians enlisted and about 75 native laborers supervised and helped carry out ~~and~~ the survey suppressive treatment programs and malarial control program in general. Originally plasmodium falciparum ~~xxxxx~~ constituted about 48% of the admissions for this island. After extensive malarial control only a rare case of this species was encountered and gradual decrease in the cases of plasmodium vivax occurred. It was difficult to evaluate statistics from malarial control reports of the actual cases contracted on this island proper. Many men arrived in the area for rest periods when suppressive treatment was discontinued and a break through occurred giving the men there original mission on Efate which in a majority of cases were contracted on other islands.

Suppressive atribine therapy was used on all bases in this area until July 1943 when it was continued on Efate as no longer necessary. Owing to the few cases which have occurred on Efate which actually could have been acquired here this action was warranted. In addition to malaria the native populations suffered from hook worm diseases infestation with trichocephalus trichirius, yaws, tropical ulcers and tuberculosis with a few cases of filariasis seen at the local french hospital. A few cases of liver and intestinal flukes also occurred among the natives and as the intermediate hosts are present there remains a potential foci of infection. For the major part these natives are from indo china.

Suppressive doses of atribine used to prevent the development of clinical malaria; a dosage of two tenths gram was administered twice weekly. This dosage only suppresses the clinical symptoms in a certain number of cases but those who do break through exhibit as a ^urule only mild symptoms. The anti

malarial therapy at this hospital is combined quinine and atribine. The program has yielded the best results. For the first three days a daily dosage of quinine chdrochloride 30 grains together with atribine ~~4xxx~~ grains $4\frac{1}{2}$ was given orally in divided doses three times daily this was followed by atribine $4\frac{1}{2}$ grains daily for 4 more days. It was found that 80% of these patients so treated relapsed in from six weeks to three months to overcome this high relapse rate the men were discharged to duty after clinical symptoms subsided with recommendations to their respective medical officers to contrinue the atribine to tenths gram twice weekly for a period of three months. This protracted treatment reduces the relapse rate appreciably. All wounds were treated both locally and orally with sulfathiazole or one of the sulfonamid drugs with gratifying results.

By the end of 1943 the war had ~~annexed~~ somewhat bypassed the New Hebrides Guadalcanal area. No longer were large numbers of battle casualties being received. As the combat zones moved forth and west and other hospitals were consturcted nearby the fronts the usefulness of base hospital no. 2 was greatly diminished. In the early part of 1944 no battle casualties were received and only local patients were admitted coming from the various activities on the island and from ships which put into the port. The census of patients slowly decreased throughout the first part of the year and as military activities converged to other areas. The situation finally came about that it was necessary to dismantle the hospital in order to be able to move the other activities from the island from which the hospital was dependent upon. The dismantling process began in February 1944 when two units of 400 beds each were prepared and segregated for shipment as additions to hospitals ~~pxi~~ planned for advanced bases. These units were never used as planned but instead remained with the hospital.

In June 1944 orders were received to reduce the bed capacity from 500 to 200 beds by 1 July. Further orders were received to cease functioning as

a hospital on 1 August 1944. The process of dismantling continued with a small force of SEABEES During these early months of 1944. By 1 November 1944 all buildings, equipment and supplies were ~~xxxxxx~~ crated and loaded aboard the ship. The entire hospital with its personnel of four officers and 19 men embarked for Lamaey New Caledonia to the selected staging area arriving on 2 November. Unloading of the ship required ten days in by work done by the Army. The hospital was assigned to the sick marine dump area which the marines were abandoning when the hospital moved in. This staging site turned out to be ideal for the task. There were 17 storehouse buildings in the area 40 by 100 ft. and it was necessary to use ten of these buildings to rehandle the supplies and equipment. The buildings and much of the heavy equipment was dumped in the 47 SEABEE area where it was gone over for repairs and recreating by activity. All medical supplies and equipment were sorted and segregated by the hospital personnel with the aid of borrowed modern machinery from the base to which ~~ixxxx~~ the hospital was attached.

It was evident the hospital had no further usefulness in this location and no changes or improvements seemed warranted. There were no administrative or personnel problems during the year other than those present in all hospitals. The personnel of the malaria control groups of both the Army and Navy performed their work in an exemplary manner. Prior to the occupation of Efate by the armed forces the island had been a hot bed for malaria but following the effort of the malaria control unit it becyme a reaonsably safe place ~~xx~~ live.

During 1943 there were 531 original admissions to the hospital for malaria and in 1944 to August 1 there were 68 treated with original infection. There were 19 original admissions for malaria during 1943 from members of the staff and only three in 1944x up to the time the hospital was closed. The ~~xxx~~ reservation was free of anopheletes ^{mosquitoes} and very few culex were found in the

searches. All cases of malaria developing from members of the staff generally were considered to have been contracted while off the reservation on recreation parties.

During the winter of 1944-45 new supplies and equipment were acquired to bring the hospital ~~salinwank~~ up to allowances. This operation was completed by 1 March 1945 in preparation for movement to a new location. The hospital was rated of a 1600 bed capacity. On 6 July 1945 loading operations began to place the hospital and its equipment on board the SS JOHN HOLMES for transportation to a new site at Subic Bay, Luzon island in the Philippines. Departure from New Maya, New ~~Exilon~~ Caladonia was on 19 July when the first echelon with the commanding officer on board left the harbor. The JOHN HOLMES arrived At Subic Bay on 11 August 1945. A base hospital camp was opened at Cupi Point on 12 August.

Even though VJ day occurred on 14 August it was considered necessary to provide a hospital in the Subic Bay area for some months following the end of the war. Accordingly preparations continued toward this objective. During the course of off loading materials and beginning to establish a new hospital requirements diminished and orders were received on 14 December 1945 to decommission base hospital No. 2. The personnel of the hospital with all its supplies and equipment were in a state of flux over the last months of 1945 and during January and February of 1946. No actual erection of buildings other than the temporary camped at Cubi Point was accomplished since even though the area needed a hospital it was probable that a more permanent facility would be erected rather than using the quonset huts. At a time like this rumors were received daily and denied the next day relative to whether or not a hospital would be built. Relatively little of the second echelon supplies and equipment which were transported from Lama to the Philippines on the SS CALEDONIA were taken off. Rather most of these supplies were taken to the medical storehouse at Samar.

In the early construction of the hospital on Efate some of the buildings were constructed too low to the surrounding ground level as a result of this lack of familiarity of the requirements for tropical construction there were many occasions when surface water overflowed the decks of the buildings to a depth of six to eight inches.

During 1942 and the first half of 1943 when casualties were being received from the fighting front at Guadalcanal most all ~~patients~~ ^{patients} ~~patients~~ had received excellent first aid care. This primary treatment played an important factor/subsequent ~~in the~~ ^{in the} rehabilitation of these wounded men who generally were received at Efate in an average elapsed time of about 38 hours after the injury. In the scheme of things to provide essential hospital care and subsequent transfer to rear areas and ~~to~~ to the United States all casualties were classified ~~in~~ in one of ~~four~~ four categories:

Class A---convalescent expectancy of less than 90 days.

Class B---psychoneurosis war neurosis and situational.

Class C---convalescent expectancy of more than 90 days.

Class D---permanently disabled for further duty in the south Pacific area.

Class A casualties were returned to duty as soon as practicable. Those patients classied B. C. or D. were evacuated to hospital or ambulance ships or other ships destined to return to the United States. Generally patients were not held in the base hospital any longer than absolutely necessary.

During the ~~the~~ height of the battle action nearby it was necessary to maintain a constant turnover of patients in order than available beds would be waiting for unannounced admissions of large groups of patients.

BASE HOSPITAL NO. 3 LEITH, SCOTLAND

This World War I hospital was assembled at Philadelphia on 10 December 1917 where the organization of the unit and the acquisition of supplies and equipment was accomplished. The hospital reached Edinburgh on 29 July 1918 and arrived finally at Leith, Scotland on 17 August 1918 where it occupied the buildings of the Leith Parrish Poor House at Seafield as a sub tennent of the British Army.

At the time of occupation of its new quarters the wards were occupied by 50 patients of the British Army. From that date to December the 3rd 1918 when demobilization was begun the hospital handled patients from the land and sea forces of both the United States and Great Britain in addition to a few emergency cases received while demobilization was actually in progress. The buildings were clear of patients 31 December 1918 and the property returned to the British Army on 15 January 1919.

It was necessary to make alterations and ~~improvements~~ improvements to the hospital property during the time of the navy occupation of it. These modifications ~~in~~ included installation of sanitary fittings eating and lighting fixtures and repair of the roads. The erection of hutments increased the hospital capacity to 1,000 beds and this work was complete at the time the armistice was signed. The citizens of Leith denoated \$7,000.00 for a recreation hut for sick officers and the american Red Cross gave \$10,000.00 for rest and recreation hut for female nurses. These buildings were not ready for occupancy at the time of demobilization.

In addition to the main poor house buildings the hospital utilized a hotel building as nurses quarters three houses in Leith for ~~nurses~~ ^{nurses} and hospital corpsmen and Dunmore House a private residence loaded and equipped by the scottish Red Cross convalescent hospital. The latter unit was not occupied until 6 weeks prior to demobilization.

The largest number of beds in use at any one time was 647. The total

number of patients treated was 1,978 of whom 526 underwent surgical operation with 1 death.

There was some delay in the establishment of the hospital since it had previously been taken over by the British Army. There was disagreement between the owners and the new potential occupants until it was agreed that the navy would occupy it for hospital purposes as sub tenants of the British Army. This agreement worked well throughout the time the hospital was in existence. Members of the British Army and Navy were cared for during the time the hospital was in commission.

During the operation of the hospital surgical teams were organized and stood by for deployment in areas where they might be needed. There were three of these teams and two of them which consisted of three medical officers, two nurses and two hospital corpsmen were used on occasion in France. The commanding officer of this hospital was CAPT C. M. DeValin, MC, USN.

BASE HOSPITAL NO. 3, ESPIRITU SANTOS

This base hospital No. 3 organized for service in World War II was located early in 1943 at Espiritu Santos base Cactus in the new Hebrides group of islands. The hospital was commissioned 26 January 1943. The hospital was formerly designated as cub 1 which consisted of 86 officers and 950 enlisted men; this group had landed on the island 11 August 1942.

At the beginning of the hospital was located near Pier 1. The site chosen for a hospital location was on a partial slope toward the sea with the upper half on fairly level ground. The entire area was heavily covered with coconut trees and undergrowth and considerable labor was involved in clearing the area for a suitable hospital site. Quonset huts tropical with plywood decks were erected for wards. These were well screened and ventilated as adequately as possible under conditions then existing.

Lighting was supplied by generators and gasoline lanterns were available in the event of an emergency. Blackouts were a nightly occurrence since the Japanese conducted bombing raids and these blackouts were great hinderance to medical officers and hospital corpsmen carrying for patients. Medical attention was administered often by the aid of flashlights and there were times when even this amount of illumination could not be used. The quonset huts as they were constructed at that time could be made practically light proof but in order to do so the ventilation required had to be sacrificed. Numerous patients were being cared for long before the hospital was erected. This hospital care was accomplished in tents of the pyramidal type approximately 16 by 16 in feet in size and these were available and erected as needed. None of the tents had decks in them and none was screened. During heavy rains the water ran through the tents despite the ditching that was done outside to prevent it. During these rains everything became wet; clothing and leather became moldy. Seabags that had to be stored in tents without adequate flooring became soaked and the contents ruined.

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Food procurement was under the supervision of the Army. On the first landing all cooking was done on open fires and food eaten from mess kits. These utensils were cleaned by immersing them in hot soapy water then rinsing them in hot clear water. The water had to be changed frequently to prevent the accumulation of grease on the utensils. In a few days after landing a suitable mess hall had been erected with adequate screening and this aided in solving the fly problem which was a menace.

The water supply at first was under the supervision of a sanitation commissione. Lyster bags were located at convenient spots about the compound and were filled from a large water truck that made regular rounds. The water was chlorinated and regular tests were made to insure its safety and value. Natives on the island were using barrels and other ~~xxxxx~~ resepticales to store rainwater which was entirely satisfactory for their personal use but it also served as an excellent place for mosquito breeding. All river ~~xxxxx~~ and streams were grosly polluted and/high bacillus coli count.

During the period 15 August 1942 to 31 December 1942 a total of 4,175 patients were admitted. These patients included Army, Navy, Marine Corps and Coast Guard personnel. Base Hospital No. 3 was under the command of CAPT A. S. Judy, MC, USN.

BASE HOSPITAL NO. 4 WELLINGTON, NEW ZEALAND

Base Hospital No. 4 Wellington, New Zealand ceased to function on 1 April 1944. In the first three months of 1944 less than 350 patients had been admitted. There was no longer any need for continued operation of a hospital since activities of the fleet and the marine corps had been extended thousands of miles north and west.

BASE HOSPITAL NO. 4 QUEENSTOWN, IRELAND

This World War I hospital consists entirely of portable buildings shipped from the United States. The work of unloading them began on May 24, 1918 and the hospital was opened and ready to receive patients on 11 October. The buildings were set up without sacrificing a single tree on the old estate in Queenstown known as White Point. The hutments were of the portable type and were shipped in 50 units each of which made a complete building 20 by 32 feet. Floors doors and windows were made of panels. The floors and walls/of double thickness with an air space ^{were} and building paper between them. The buildings were light but substantial and withstood many a heavy storm. The main wards general mess room and hospital corps barracks were 128 by 20 ft. made up of 4 barracks units. One ward would contain 40 beds without crowding and an additional bed in a quiet room. At the end of the ward were 2 water closets two shower baths and a urinal. Floors under the showers had a concrete curbing and flooring a ~~fining~~ of impervious substance similar to cement. The hospital tailor cut curtains from rubber sheeting which were hung on rods made of gas piping. The walls of the quiet room were of double thickness lined with tar paper the intervening space being filled with sawdust. The buildings were heated by steam. Floors were covered with linoleum ~~xxxx~~ to prevent entrance of cold air through the crevices left by the sinking of the floor panels. At the sides however the floors were not so well covered and the air coming in and heated by the radiator promoted ventilation. Walls were finished in distemper green for interiors white for roofs and beams. Roof ventilators were provided. Lighting was accomplished by electricity.

The operating pavilion consisted of two units each having its operating room etherizing room and sterilizing room. Floors were covered with a preparation ~~xxx~~ similar to cement. A cluster of five 50 candle~~s~~ power lamps under a reflector furnished illumination.

Difficulty was experienced in procuring an adequate water supply since that available from the city was limited in amount and of doubtful quality. A boring of 146 ft. and the use of dynamite failed to strike water so permission was obtained to tape the line running to a neighboring dockyard. Water obtained in this way had to be used with great economy. A small reserve supply was held in two tanks of 2,300 and 10,000 respectively placed one above the other brick pier 22 ft. high constructed for that purpose. A system of salt water distribution was also installed for supplying toilets urinals and so forth utilizing two Worthington pumps. The third pump was installed to provide additional force in case of fire.

There was 30 female nurses attached to the hospital. Mrs. C. M. Hataway wife of the American counsel and Mrs. P. C. Macfarlane planned the refurnishing and decorating of an old residence on the grounds to be used as a nurses home. Charminglly rennovated and prepared for habitation by these ladies and accommodated 18 nurses the remainder living in a hutment near at hand. Other buildings in the complex included a chapel, Red Cross room, a brig, never used, a morgue and various storerooms. On the hospital grounds the YMCA erected a building containing a barber shop reading and pool rooms, canteen, a stage, and other sources of comfort and recreation.

The rapid erection of the hospital was largely owing to the zeal and initiative of the enlisted men of the unit who did in a day what local laborers spent a week on. A radical departure from the usual administration of the naval hospital related to inspections. This method has been previously adopted successful at Puget Sound naval hospital and its three small field hospitals with the marines. Instead of having one day set apart for commanding officers inspection which means that all work is temporarily stopped for at least a day it was assumed that the hospital should always be ready for inspection and a commanding officer held daily inspections of all units and grounds and making due allowance for the work that was going on. It was

found that any place where neglected steps were taken immediately to correct these deficiencies. These inspections were made at varying times of the day and ^{it} could be readily determined if there was a failure to keep the buildings in the best sanitary conditions at all times. It was also facilitating in keeping in close touch with the progress of patients.

The personnel of the hospital was furnished by the providence of Rhode Island navy Red Cross unit organized by LCDR G. A. Matteson, MC, USN, RF. The hospital was trained at the naval hospital Newport, Rhode Island. Within a few days after opening the hospital was filled owing to the influenza epidemic and for several weeks the entire staff was kept busy.

The commanding officer of the hospital was CAPT Dougley N. Carpenter, MC, USN and the executive officer was LCDR Lucius W. Johnston, MC, USN.

BASE HOSPITAL NO. 5 BREST, FRANCE

This World War I hospital was organized at Philadelphia under CDR R. G. Leconte, MC, USNRF and CDR J. E. Talley, MC, USNRF. CAPT H. C. Curl, MC, USN was placed in command when the unit was enrolled in the Navy and the executive officer was CDR H. A. Garrison, MC, USN.

Hospital No. 5 was the first to begin operations abroad. It was established in December 1917. It is located at the port where the bulk of AEF troops were disembarked and from which thousands of wounded men were sent home. Brest has been the principal center of navy hospital activities in Europe. The commanding officer acted as aide to the patrol commander in French waters and was in charge of the navy medical supply depot which in April 1918 began the distribution of medical and surgical stores to the various stations and units in France and to vessels in the Mediterranean and Adriatic seas.

Work of establishing the hospital was rendered peculiarly difficult by the disturbed conditions in Brest at the time of the units arrival. Energy tact and patients surmounted all difficulties. The building assigned for hospital use was several centuries old and originally had been a convent. It was lacking in plumbing and sanitary fixtures and demanded much alteration and repair but the necessary modifications and improvements were carried out with praise worthy dispatch and was in a few weeks of landing the unit had available accommodation of 500 beds. Throughout the period of war service there was an average patient load of 400; during the latter part of the war when the influenza epidemic struck the highest patient load reached more than 800.

The hospital has all the facilities necessary for the delivery of medical attention to all comers. Received in the hospital were ~~various~~ patients from various navy stations in Europe from the marine regiments from navy vessels of all classes operating in the Bay of Biscay the North Atlantic and

the english chanel and more than once ministered to survivors of german submarine attacks on merchant shipping. One such instance occurred when 320 survivors were received from the torpedoes COVINGTON and 82 survivors were from the USS WESTOVER were treated of the latter group having been in the water four days when rescued. There were frequent occasions when hospital service was rendered to train loads of sick and wounded army troops arriving in Brest for embarkation to the United States. Operating units were on several occasions dispatched from the hospital fo the front where they did yeoman service at army hospital in advanced areas. On 20 July 1918 one of the navy surgeons operated continuously for 18 hours inspired to work to the limit of physical endurance by the sight of 200 stretcher patients waiting there turn on the operating table. CDR Laclont, MC, USNRF served for a time in a liaison capacity with the french forces and traveled extensively on to french and belgium hospitals. During the year from November 1917 to November 1918 681 surgical patients were treated with a mortality of 2.05 per cent. This hospital remained in operation until March 1919.

BASE HOSPITAL NO. 6 ESPIRITU SANTOS

This hospital originally designated as ~~Lyon~~ Lyon 1 was opened for patients on 1 June 1943. Between that date and 15 December 1944 15,501 patients were admitted.

Temporarily the hospital was designed for the primary cuse of NP patients, but it soon began to function as a general hospital.

The personnel for Lyon 1 was assembeled at Moffett Field, California. The unit was commissioned 15 July 1942. Supplies and equipment were assembeled at the advance base depot Oakland, California. In the organizing period great attention was paid to the physical development and hardening of the men in preparation for strenuous duties that were anticipated. There were daily periods of physical exercise, drills and competitive athletics. Minimum standards of physical accomplishments were set up and which were to be achieved by all officers and men. Cross country hikes and other activities were held at least once a week. Swimming instruction was given to all who could not then swim and teams from various divisions completed at least weekly on the obstacle course.

During the stay at Moffett field it was possible to give^a/careful physiel^A examination to every officer and man thus it was possible to eliminate many who probably would have borken down early and who might have been a menace to their associates. Serious heart and respiratory conditions were caused from elimination. Also the physical examinations permitted a time to detect and remove from the organization a number of homosexuals whose presence in later months would have been exceedingly bad for morale. It was found that many men had been recalled from the reserves found fit for limited shore duty only then ordered for duty with such units as Lyon 1. This organization was presumed tobe intended for duty of the most strengous sort and many of the men ordered to it were by no means fit to undertake such duty. It required much paper work correspondence and

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transportation to get these men transferred to suitable duty and to get new men ordered to replace the unfit ones.

As a result of the strenuous training many men developed foot difficulties. A large part of the difficulties were owing to faults of the navy shoes. The navy shoe is regarded to be an excellent dress shoe suitable for wear on board ship but not fitted for use in the field. The fore part of the shoe was found to be ~~xxxx~~ too narrow for men marching and carrying packs. It did not give sufficient support to the arch for men who were standing and walking for long periods of ~~xxxx~~ time. When wet with mud and water and dried two or three times the shoes quickly disintegrated. The army and marine corps devoted a great deal of time to careful fitting of shoes. A man being fitted usually holds in his hands sandbags which will equal the weight of his rifle and pack. This spreads the feet and in this position the feet are measured for shoes. Equally careful attention was paid to the other items of dress many of which were lacking from navy issue. In particular woolen socks and proper shoes were requisitioned from and received from the marine corps field issue.

During the stay in Moffett field while organizing classes were started for hospital corpsmen to refresh their knowledge in every element of first aid gas warfare and other hospital corps subjects. Instruction was given as well in all aspects of field sanitation and they were exposed to the theoretical measures in mosquito control and other field sanitation measures. Each enlisted man of the group were interviewed individually and his abilities and experience catalogued. Past experience had demonstrated that field hospitals constantly developed new problems which are foreign to the usual duties of hospital corpsmen. Consequently each special skill was potentially valuable. By having a record of these skills many problems encountered later could be solved readily. Medical officers too were given

intensive refresher courses in sanitation and preventive medicine
as
particularly ~~aspi~~ applicable to tropical areas.

Each division officer and petty officer was instructed in his obligations to know intimately know every man of his division his attitude qualifications how he worked and played his matrimonial or financial difficulties and also his personal and potential legal problems. Every effort was made to have all personal affairs adjusted before leaving the United States. Experience has shown that letters to men from their families describing domestic and financial crisis at home have a very detrimental effect on their morale and it is important that ~~ifxax~~ all possible conditions that may give rise to such difficulties should be removed for the man leaves the United States. Censorship of mail from home ~~xxx~~ was considered by some x just as important for maintaining morale and censorship of mail from the men for information which might benefit the enemy. Many men were seen with a high sense of domestic obligations who finally reached a stage of acute nervous breakdown because letters from their families complained of financial difficulties or described their amorous adventures with others x while the head of the house was absent.

The ~~command~~ commanding officer of Lion 1 was CAPT L. W. Johnston who had been executive officer of the base hospital in Queensland Ireland during World War I. He also had been the commanding officer of the ~~expexim~~ experimental hospital No. 1. His wide and varied experience was put to good use and was responsible for solving many problems of field hospitals before they arose. During the organization period while Lion 1 was still at Moffett field the medical department was divided into groups to provide staffs for three hospitals of 200 beds each with several satellite dispensaries. The Lion 1 concept was to provide all necessary

navy facilities in an advanced base the whole of which was to be ~~built~~ built from scratch. Since the concept was experimental no one knew ~~exactly~~ exactly what the total function of the unit and its medical department was to be. As a consequence several modifications were made before the actual transfer overseas and establishment of the base.

In the division of the medical personnel into three units one hospital was planned to be the principal surgical center ~~where~~ while the other two were planned as accommodations for convalescent patients contagious patients and other special services. Dispensaries were arranged and planned forward to provide service 24 hours a day for the industrial area and for aviation bases. Teams were organized and especially trained for rapid handling of patients suffering from shock who needed transfusions or who had suffered burns. Standard equipment and procedures were adopted ~~for~~ for the purpose of training these teams. Plans were made for taking care of numerous injuries anticipated during the handling of cargo while loading or unloading. It was anticipated that untrained men working hurriedly often with no lights at night and with inadequate equipment would sustain many injuries. Surgeon doctors were especially trained for work in emergencies and were provided with canvas vests with many buckets containing standard instruments and dressings for use in this work. As it turned out no such emergencies arose. This does not minimize the importance of planning for it. ~~It~~

Fire and rescue parties first aid details and other teams were organized for the purpose of providing skilled assistance in the advent of fire explosion plane crashes or any other unusual disasters occurring in the vicinity of the base. The medical personnel of the unit consisted of 56 medical officers 6 dental officers, 4 hospital corps officers, and 288 enlisted men. They had been hastily immobilized and transferred to Moffett

Field so that they could sail for overseas on 15 July 1942. All arrived in ample time and then settled down to wait with little to do and it became difficult to maintain morale and enthusiasm of the group.

On 22 August 1942 a letter was addressed to the Surgeon General ~~bring~~ bringing to his attention that the medical personnel had been attached to the Lion 1 unit for about six weeks with practically no duties other than training. They had been hard working and they found it difficult to maintain their morale and enthusiasm without any definitely assigned tasks. It was recommended that many of these officers and men be detached to other duties where greater need for their services existed to be ~~placed~~ replaced later when the time of ~~final~~ sailing was determined. As a result of this recommendation many officers were detached and reassigned to ~~the~~ other duties.

Four months later in December 1942 the remaining members of the medical department were still roughly sitting on their hands. Nonetheless training and organizational procedures continued which provided some relief from the monotony as a result of these training measures the entire unit was alert and ready at any time when word might come for sailing overseas.

Lectures and other means of communication from higher up constantly impressed upon all personnel the necessity for great secrecy about the destination of the units the type and quantity of equipment and any plans concerning the deployment of the unit. At the same time ~~newspapers~~ newspapers carried considerable information about the unit and magazines published stories and maps clearly indicating the base for which ~~Lion 1~~ Lion 1 was destined. The difficulties for planning for hospital structures were increased by the fact that the construction officer did not arrive until nearly six months ~~after~~ after the organization was assembled and when he did arrive he remained only a few days. No plans of any layout were available. The supply officer was absent for many weeks and his subordinate^s were unable to

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make decisions or provide any reliable information about materials might be available for hospital construction. An effort was made to determine what sort of equipment and materials would be provided for galleys, laundry and other sanitary purposes. Information was received at the necessary items would be provided in adequate amounts. This later proved not to be true and hours of time were necessarily spent in battling to get some minor but necessary piece of equipment or supplies so that the hospital could perform its function. As an example ~~ixxx~~ the information was received that a 30 horse power boiler would be provided for each three galleys to provide steam for cooking and dishwashing machines. These boilers were ^{till} never discovered ~~in~~ the end of the war and provision for steam for boilers and dishwashing were inadequate throughout the period the hospital was in commission. It was supposed to have been provided that chemical tank toilets would be standard equipment for all wards. The tanks were furnished but bowls and fittings for the toilets never arrived. During the waiting period efforts were made to weed out all weaklings mental or physical and as well as petty criminals homosexuals and chronic alcoholics. Individual suffering from such conditions as hayfever, asthma, various allergies and those with faulty feet were also eliminated. 269 men were removed from the organization for medical reasons.

In preparation for the movement and transfer and setting up of the functioning unit in a virgin area a great number of problems that may be anticipated can be foreseen. Despite all advance planning however a multitude of problems always occur that could not for one reason or another be anticipated. In order to minimize these potential problems a great deal of attention must be paid to the procurement of every possible item of equipment and supply expected to be needed. Not only is it important to procure and pack these items for transit but it also equally important that the containers

in which the supplies and equipment are packed are clearly indicated on the outside of the containers. Inevitably in the transportation of a huge amounts of materials some items are bound to be lost mislaid or damaged. For this reason essential supplies and equipment must be packed in various containers to make certain that at least minimum quantities of all essential items are available at the destination.

The majority of the personnel in Lyon 1 were inexperienced and had little knowledge of the methods of procurement packing loading transportation and unloading of essential items needed for the setting up and operation of an advanced base. Certain hospital corps officers always in short supply who had background training and knowledge of property were given additional opportunities to improve their respective knowledge in these matters. During the stay in at Moffett Field several of these hospital corps officers as well as medical officers were detailed temporarily at the Oakland supply base to supervise the procurement the packing and containerizing of needed medical supplies. Several medical officers brought special items of their own office equipment and others received certain items as gifts. All of these extra items were found to be of great benefit when the hospital was actually functioning.

Lyon 1 owing to the enormous quantity of supplies and equipment necessarily had to be loaded upon several ships. This loading operation began early in January 1943 for preparation to be transported to an advanced base. The loading plan involved several echelons and the plan of shipment provided for ships sailings at intervals of about one month with the most important first needed supplies and equipment in the first echelon. With the first echelon went the sanitary officer with his trained assistants and supplies. With each of the next three echelons went a complete 200 bed hospital and its staff. Each ship which carried medical material had a medical officer detailed as cargo officer. He was charged with knowing exactly

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exactly

where every container of medical stores was ~~stowed~~ ^{stowed} and where it went when it was moved or unloaded. His duties were complicated by the fact that at each port where a ship stopped it was thought to be necessary to restow a considerable part of the cargo. There would always be somebody who knowing nothing of the original plan of stowage had authority to change everything to conform to some new plan. Medical stores once safely stowed in a hold might be moved at any time without any notice to the responsible officer. Despite these difficulties there was no considerable loss.

The transports which carried the personnel were of several types. Some had well organized medical departments with a medical officer on board and were equipped with ample stores and facilities for caring for all types of sickness. Other ships were cargo carriers which carried a few men and had very meager sick bay facilities. There were many variations within these extremes. In every case medical officers, hospital corpsmen and materials were provided so that facilities for the care of the sick in transit were adequate. Troops and cargo carrying ships always posed problems to both the ships company and the passengers.

The time spent on board ship en route was put to good use by each echelon where additional lectures and training were conducted so that all hands would be in the highest possible state of readiness when landed at the selected advance base point.

When organized as an advanced base the unit, Lyon 1, was in command of line officer CAPT J. E. Boak, USN. CAPT Boak was with the unit ~~xxx~~ from the beginning of its organization and was completely familiar with all aspects of the organization and the purpose for which it was intended. Between the time original organization of the unit and its actual arrival in the south Pacific at Espiritu Santos changing conditions of the war ~~xxx~~ brought about a modification of the original organization. By the time it landed the unit was broken up into two principal units. The Lyon members forming what amounted

to a port authority and the medical units consolidating into what was to become known as base hospital No. 6.

In effect the establishment of field base mobile or other type of overseas hospital unit such as base six is similar to the establishment of a small city. The principal difference is that cities generally grow over a relatively long period of time. Such an organization as this base hospital---and there were nearly 50 such units established by the Navy in World War II---require almost immediate establishment of all of the services generally provided in a small city with the additional responsibility of having to provide almost immediate medical attention to rather large numbers of helpless or semi helpless patients. There are in general three principal responsibilities of a commanding officer which are: 1) attention immediately to sanitation conditions; 2) organizing staffing and equipping first aid and dispensary units; and 3) construction of the hospital and making preparation for the early receipt of patients.

Inevitably the great majority of medical officers and hospital corpsmen are well trained in and familiar with their respective professional medical duties. However it is simultaneously necessary that they provide construction and labor talents in the preparation of suitable facilities to receive the patients upon whom they are to confer their professional talents. In the early phase of the establishing a hospital particularly in the tropics it is necessary to select the sites for the erection of buildings to provide proper sanitation facilities messing facilities storage facilities and all other services including the provision of electricity so that the patients who will be received can be properly attended. In effect it is necessary to carve out of very primitive surroundings a modern progressive city.

CAPT Johnson described part of this early problem as its related to sanitation; this advanced base grew in the space of a few months from a few scattered groups that were of no sanitary importance to each other to be a

of military importance to each other to be a closely settled industrial community of many thousand men. In a short time it progressed through all stages of development that one of our frontier cities would undergo in several generations from the arrival of the pioneers in their covered wagons until it became a ^ebussling industrial center. The earliest sanitation effort was the appointment of a sanitary commission. This was considered necessary because each new group arriving at the base experienced outbreaks of bacillary dysentery involving ~~xxxx~~ on the average 60% of the command within two weeks. Conditions were ideal for breeding and distribution of flies and mosquitoes. The commission consisted of medical officers and engineers of both the Army and Navy a member of the malaria control unit and a civilian doctor representing the local government. In the case of base hospital six although the commission made recommendations for sanitary action it was found impossible to enforce most of the recommendations and the commission degenerated into a debating society. The commission was dissolved after two months of futile effort. At this stage sanitary work had a very low priority and public health idea was hard to sell.

In the early days administrative difficulties were increased by the fact that the number of army and marine groups had established themselves within the area but regarded themselves as independent of any local authority. This sort of confusion can be expected since the vast majority of the people arriving in such an advanced base in such a short period of time and with relatively little aggregate total experience in such matters almost always have to learn by bitter experience the need for individual and group practice of sanitary techniques.

There were elements of army navy and marine corps including three hospitals on the islands where base hospital six was set up. Most of these units were concentrated near the principal harbor, but some units were scattered two to

five miles distance. With such a multiplicity of commands and functions there was bound to be varying degrees of practices and inforcement of sanitary conditions with each commander, jealous of his respective prerogatives, providing and enforcing sanitary regulations with various degrees of effectiveness. Owing to the differences in individual units objectives equipment and personnel there were various degrees of capability in providing sanitary conditions. It so happened that a dengue like disease ~~program~~ existed on the island in epidemic form with some organizations having as high as 12% of the men sick with disease. All the necessary conditions existed to produce an epidemic of malaria. In setting up the various units the disposal of such waste products as tin cans, garbage, coconut husks and fawns with other waste was accomplished simply by discarding them in the first available unused spot. These garbage dumps served as breeding places for flies and mosquitoes which were carriers of diseases which due the most damage to expeditionary forces. Many latrines garbage sheds, galleys and mess halls were inadequately screened and were not being maintained in a sanitary manner. Some of the reasons for not providing better protection for the waste disposal was owing to lack of equipment and some of the garbage dumps were owing to lack of experienced personnel who knew how to provide proper sanitation measures. With the establishment of the port authority a concomitant establishment of a sanitary officer with authority to inspect all areas and recommend measures to correct them provided some surcease from the insanitary conditions. During a three month period early in 1943 there were approximately 80,000 sick days among island personnel---Army and Navy---suffering with dengue in a three month period.

Although the island was sparsley ~~population~~ populated with native inhabitants these people were in general a poorly nourished lot. Among them were large numbers suffering from tuberculosis, yaws, malaria, filariasis,

and intestinal parasites.

Water to supply the hospital was at first produced by distilling it from local streams and every effort was made to provide one gallon per man per day. Later a water purification plant was established on the banks of one of the rivers and from this plant water was pumped to a large tank on a hill convenient to the base. From this point it was distributed by water carts. More recently a large well was excavated near the beach where the water that had penetrated a porous lava flow comes out above a layer of impervious coral. There were several wells of this type in or near the base and the water from them after being properly treated was then distributed by pipelines direct to the larger units. This water has been found to be of excellent quality and there has been no epidemic of water born diseases. Food for the hospital was provided by the Army and the source of supply was generally satisfactory although certain desirable elements of the Army diet were lacking from time to time. Some cases of ~~aphantemoniasis~~ avtaimonis were seen but they were detected early and yielded quickly to treatment in general the food supply was satisfactory.

When the hospital was established and for some time following mosquito control was a serious problem but clean up campaigns started in conjunction with the sanitation control eliminated most of the mosquito breeding sites so that in the latter phase of the hospital operation relatively few mosquitoes remained.

In the early days of each camp most of the kitchen waste were carried a few yards beyond the limites of the camp and a convenient hole. Latrines generally were opened trenches or boxes over shallow trenches which allows access light and flies. Under these conditions nearly everyone had dysentery. Cleanup campaigns under the direction of the sanitary officer with provision and of screening of latrines galleys/mess halls to make them fly proof provided conditions so that in a relatively shore time fly borne diseases were rare. 12

When the site for base hospital six was first occupied it was discovered that the area had been the dumping place for garbage of earlier established camps and it was necessary to maintain a watch night and day to protect the hospital property from continued similar use. At about the time the unit arrived there had been established a common garbage dump to which all units were ordered to bring their garbage for disposal. At this dump there was a deep ditch into which the garbage was supposed to be dumped following which each night the garbage collected was covered with oil and burned after which a bulldozer pushed enough earth on top of it to bury it to a depth of at least a foot. This practice was not well regulated and an order was then issued that each organization should dispose of its own garbage by burning. This practice was not too successful and great quantities of vital fuel were wasted ⁱⁿ an effort to burn the garbage. This was particularly difficult during the rainy season when for considerable periods there was an average of an inch of rain per day so that the garbage never had a chance to dry. After several months a garbage lighter was secured and garbage was loaded on this barge to the towed out to sea and dumped. This arrangement proved quite satisfactory.

The base at Espiritu Santos had many large industrial units aviation activities and combat organizations of many types. Some of these units were permanently established at the base while others came there for some combat areas for rest and recreation. Some of the units had their own medical organizations while others were entirely dependent upon the base. The Lyon organization contemplated providing dispensary service for all the organizations that might be stationed at the base. Some units were provided with dispensary service before the Lyon unit arrived and these were soon taken over on arrival. The entire base ~~XXXXXX~~ covers about 80 square miles so that a distribution of necessary dispensaries was a considerable task. This was made more difficult

in the early period since roads were poor mud was deep and vehicles were scarce. As the base was built up these defects were corrected and the roads paved with coral and the task became much more simple. On 26 April 1943 there were 4 dispensaries manned by the Lyon medical organization. On 15 May 6 more were added. By September 1943 there were 97 separate units comprising the base command. The dispensary service increased until there were 27 dispensaries and 26 sick bays which provided 622 permanent and 456 temporary beds. These dispensaries and sick bays were served by 41 medical officers. Twenty four hour service was provided in the larger dispensaries where the type of work performed justified the service.

Although the medical organization of the Lyon unit was a part of the overall command at first in August 1943 the medical organization was redesignated as a separate command and known as base Hospital No. 6. As a result of this reorganization the dispensaries became a separate unit under the direction of the base medical officer. A medical emergency squad was organized in the hospital to give additional support to these dispensaries. The squad was composed of five medical officers and five hospital corpsmen whose mission was to proceed at once to the scene of any disaster at which medical assistance might be needed. The squad was prepared to proceed by truck crash boat or by plane any where within a thousand miles of the base. For minor disasters a two man team with equipment for ten minor casualties was organized which has been mobilized on every air raid alert and opportunity was taken for training the squad at this time. On several occasions this squad was called out to aid survivors both at this port and at sea.

Plans were prepared for the construction of a functional arrangement of various hospital wards clinics and specialty departments. After the first plan was prepared all hands were requested to submit suggestions for the hospital lay out. This invitation brought many excellent ideas and another

plan prepared embodying the best of the new ideas. This plan was blueprinted and distributed for study with each head of the department asked to submit further ideas for the construction of buildings for his department. After arrival of the advance base and studying the characteristics of the hospital site a third plan was prepared which adjusted the hospital requirements to the local terrain. Then a trip was taken to visit other hospitals in the area and a fourth revision was made to take advantage of knowledge gained during this inspection trip.

Construction of base hospital six was started on 27 March 1943 and on 27 May it was ready to receive patients. Most of the buildings were of quonset huts 20 by 36 ft. Through some error huts of the arctic type were provided although this base is close to the equator. Buildings had solid wood bulkheads and small dormer windows which would not allow sufficient ~~circulation~~ circulation of air ~~in~~ in a hot humid climate. To correct this the corrugated metal ring was cut and bent in such a way that a louvre about 18 inches high extended the full length of the building on each side. This opening is screened and provides excellent circulation of air in all parts of the building. All officers and men who were assigned to duty which would aid in the early completion of the hospital. As each echelon arrived all personnel were quickly ~~absorbed~~ absorbed and put to work. Previous experience with expeditionary hospitals taught us that the medical facilities had a very low priority for construction as an advance base. At Moffett Field when a number of quonset huts were erected the medical facilities provided a large working party to assist in their construction. As other departments with drew their men from this working party ~~we~~ we were glad to supply additional numbers. As a result we had a considerable number of men who were thoroughly familiar with all the details in erecting of quonset huts. This training proved to be invaluable for it was our 15 experience that construction battalions were never able to provide enough men

to make satisfactory progress with our construction. For a long time a standard working party of men from the construction battalion and men from the medical facilities worked together. As our men acquired added skill they were able to accomplish the construction with only a moderate amount of supervision from the construction battalion people. The officers aided in construction of their own quarters and erected ribs and roofs of their huts wheeled and spread coral for walks and did many kinds of work. As a result of all this labor by our own men the lion 1 hospital despite its very low priority made very rapid progress towards completion.

After careful study it was decided to combine the quonset huts by putting them into a end. Two huts were joined in this manner and found to work very well. Then three huts were joined and that worked even better. We kept on lengthening the ward buildings until at last we have one which is 340 ft. long and it is the most satisfactory of all. If this one is not the longest single ward in the world it is at least in the upper brackets and I can recommend long wards for hospitals of this type as being most convenient and economical in the time of labor of the personnel. A typical ward arrangement was adopted it consisted of three buildings each 120 ft. or more in length and arranged in the form of a T. At the intersection where these three buildings meet a hut of frame construction with a large screened openings along the sides is constructed. This hut contains a diet kitchen linen room ~~XXXXXX~~ doctors office and an open space for storage of wheel ~~XXXXXXXXXX~~ chairs and ~~xxx~~ other gear. A slop sink and a compartment for the racks holding bed pans and urinals is also provided. Each of the three ward buildings accommodate 50 patients. The facilities for the three wards are concentrated in the hut at the intersection. This proved to be the most economical ~~nd~~ and convenient ~~f~~ arrangement. It allows all the facilities for 150 patients to be grouped in one convenient central area. 16

In several of the ward buildings the contour of the terrain required that the floor levels of the three wards vary considerable at the meeting point. This requires the ramp of not more than one foot in a ten foot slope since the patients on wheel stretchers in the mobile X-ray unit must be moved up and down the ramp. Considerable ingenuity was exercised in construction of these ramps so that they did not interfere with the usefulness of the structure.

The construction of base hospital No. 6 was accomplished under the general supervision of a construction battalion. Construction had been found a low priority and was source of much ~~xxx~~ annoyance and embarrassment. Frequently work was started on a building with many men and machine working at high speeds for 24 hours a day for a few days. Then the men and machines would be ~~wixxx~~ withdrawn suddenly. When asked the reason we were told that it was necessary to make a big showing by having as many projects under way as possible and that the work might be resumed on the hospital construction after projects of higher priority were completed.

It was planned that the hospital construction ~~xxxxxx~~ should proceed with main ~~xxxxx~~ roads being built first then followed by the construction of quarters for the staff. After this was accomplished construction of hospital offices, outpatient clinics, and finally hospital wards and mess hall would be done. It was discovered that quarters for the staff should be close to the hospital buildings and that they should be as comfortable as possible.

The arrangement of the hospital buildings was dominated by the fact that they were erected in coconut groves. The standard width between the rows of trees in the area was about 8 meters which is ~~appx~~ approximately 27 ft. The quonset buildings were 20 ft. in width so that they fit very snugly between the rows of trees. In this area camouflage and concealment were very important as also was protection from the rays of the sun. The

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cocanut trees under which the buildings were erected provided for these needs in^a very satisfactory manner. Early in August ~~additional~~ with construction of the hospital nearly completed and ready for operation problems of maintenance assumed major importance. Failures of floors buildings and machinery were constantly occurring and men and materials were not available for repairing them. It was necessary to plan for a maintenance force not only to care for the buildings but also to maintain the machinery in good operating order. The mess hall and galley were located in a frame and screened structure ~~with~~ with a concrete deck. This proved to be cool and well ventilated easy to keep clean and suited the needs of the hospital in a very satisfactory manner. During the construction period it was necessary to admit patients and some 534 were admitted during the month of August even before hospital was ready for general operation.

Early in August 1943 ~~work~~^{word} was received that the hospital should prepare to receive 50 female nurses who would be sent to the hospital as soon as quarters were ready for them. Requests was made for ten quonset huts a galley and mess hall and other facilities for their use. This marks the beginning of a new epoch for this base. Up to this time open latrines, urinals and showers were everywhere in plain view from the road and men walked naked to them with no thought of any need for covering themselves. With the coming of female nurses to this part of the base a change of the point of view of everybody on the base was necessary if embarrassment was to be avoided. At the Army's evacuation hospital on the island there had been female nurses for some time but they were kept so close to their own grounds that their presence on the base was seldom noticed. At that hospital the quarters for nurses were surrounded by a 12 ft. high wire mesh fence. At first I questioned that it would be desirable

MOBILE HOSPITAL NO. 1

This hospital was established by order of SECNAV dated 9 September 1940. It was the prototype of 9 others of similar organization each one of which in actual operation was different from the other. The concept of mobile hospitals was developed from and based upon experience in World War I. Many modifications were made in its ~~xxx~~ successors to conform with constantly changing requirements and conditions. One of the most important lessons learned was that they were not mobile.

The commanding officer of mobile hospital no. 1 was CAPT Lucius W. Johnson, MC, USN who had served as executive officer of a base hospital at Queenstown, Ireland during World War I. The material and personnel for the hospital was embarked on a navy transport 25 October 1940 and reached its base at Quantanamo Bay, Cuba on 30 October. The personnel was subsisted on the transport until after breakfast on 2 November by which time a method had been established ashore. The hospital had a definite task as a part of a mission of the medical department which included: 1) to erect a hospital; 2) to provide the best possible care of patients; 3) to keep the hospital as mobile as possible so that it could move quickly; and 4) to inform the Bureau of Medicine and Surgery concerning the suitability of the provided equipment personnel organization and administration.

During the time that material was being assembled at New York the carpenters gang was employed in building tent floors sorting out parts for prefabricated buildings and marking them so that the parts of each building could be quickly segregated. Blueprints of the men and machines were studied and plans were prepared for setting up the various apparatus.

A plan of ~~xxxxxx~~ stowage was worked out so that items of equipment and supplies that would be urgently needed for immediate use on landings should be the first ones unloaded. These careful plans for last in first out stowage

went so far a rye that it would have been ludicrous if it had not been so serious.

Tents tools ranged latrine boxes and other ~~xx~~ articles which would be immediately needed were placed by arrangement with the ships officers in the top layer of no. 6 hold. CAPT Johnson who wrote an account of the setting up and organization of this hospital stated that he saw the hatch close and left for the night happy in the feeling of an intelligent planning. But unknown to him steavedors worked long hours at night ~~xxx~~ stowing lumber on top of no. 6 hatch. On arrival at Guantanamo the word was passed on heavy articles first so that dock could be kept clear. Nothing moves more slowly than piece lumber so work was not ordered on no. 6 hold until late in the day. Instead of the articles mostly urgently needed the first to be unloaded were caskets, ward furniture and other unwanted objects. The limiting docking facilities further ~~h~~ complicated the situation. It was necessary to clear the dock for another ship which was to arrive shortly after the transport. The naval station and fleet ^{pressed} marine force ~~xxxxxx~~all their trucks into service to move the hospital supplies. They were brought to the hospital site ~~h~~ about 2 miles away too rapidly for the construction to identify and segregate them. Thousands of boxes bails, barrels, cartons and crates were dumped premusciously around the site. This work was carried on until midnight of the first day. For a time a motor driven flood light was provided but this soon ran out of gas and the greater part of the evening work was done in darkness so that no intelligent supervision the unloading and identification of the articles were possible. This indiscriminate dumping meant many days of labor by a large gang it was necessary to find the articles that were urgently needed in order to establish order out of confusion. It also meant that ~~thousands~~ thousands of pieces had to be worked over and looked over repeatedly in the process of sorting. Many of the most needed items were not found until well

into the second week. During the first few days there were too few shovels picks saws hammers and other tools for digging leveling clearing opening boxes driving tent pegs making tent floors and many other necessary jobs.

Unforeseen complications and priorities added to lack of rolling stocks frequently interfere with the best laid plans. Precautions can be taken ~~xxxx~~ against some of these difficulties but problems will arise to vex any future group and so allowances ~~xm~~ should be made toward them.

This experimental hospital was located on a point extending about 1,000 ft. northward into Guantanamo Bay. Its greatest width was about 350 ft. at the southern border and from this point it tapered irregular to a rounded point. The base was of coral formation which was over a lava flow of varying thickness. Above all of this was top soil with an extreme depth of 18 inches and many outcroppings of rock. The area originally was covered with a dense growth of cactus and thorn bushes. Before any attempt could be made to set up the hospital the area had to be cleared by using bulldozers and pushing all of the excess the materials over the side of the cliff. This great mass of dried brush harbored ~~xxxxxxx~~ countless mosquitoes and other insects and also was a fire hazard. One fire which occurred in this brush gained such headway that it required the assistance of the naval station to help put it out. A gang of men and a truck worked for three months to clear the brush from the borders of the hospital site. The trade winds in the Guantanamo area blew ~~xxxxxxx~~ strongly across the area day and night so that every thing was enveloped in a cloud of dust. This was corrected to some extent by ~~xxxxxxx~~ hauling several hundred truck loads of gravel from the beach three miles away and spreading it over the roads and vacant stations. This added materially to the comfort to both patients and staff. The space officially assigned to the hospital was about 20 acres of fairly level useful land upon which the ~~xxxxxxx~~ hospital was laid out. There were two deep 3 gulleys transversing the site and a main road had been cut through it. The

permanent already erected in the area were shown on a map as inaccurately located so that the useful area for the hospital was about 8 acres much too small for such an activity.

Originally conceived the mobile hospital was supposed to provide 500 beds. Since there was inadequate space for such a layout no more than 350 could be ~~XXXXXX~~ accommodated. It was believed that hospital units should be relatively widely separated so that in the event of air attacks the hospital units would be far enough apart to prevent mass casualties. Among the many problems learned in the development of this hospital was that on future such units should be established only after accurate surveys of the site were made and wards and other structures as well as roads were supplied sewer and electric systems be ~~1/2~~ planned for in advance.

In only 2 weeks following a first landing of the hospital staff and equipment the first two wards were ready for operation and five patients were admitted. During the first two weeks first aid and sick call tent had been among the first units to be established. Construction continued and by the end of another month four wards were in use with 75 patients~~x~~ being cared for. By the middle of January 1941 110 tents were complete 50 of which were in use as quarters for the enlisted staff 75 for wards 10 ~~for~~ offices, 13 for storage and 22 for officers quarters. There were also 12 prefabricated buildings, 5 used as mess halls 1 for the laundry 1 for a dental clinic laboratory pharmacy brig and cold storage in addition there were two prefabricated buildings used for operating rooms and the patient census rose to 140.

Dr. Johnson points out that one of the important lessons learned from the experience of setting up this mobile hospital was that it was not good economy to have the labor of construction performed by members of the medical department. The hospital staff did work of stevedores ditch diggers ~~xx~~ cement workers, pipe fitters, carpenters, and laborers. No word of protest ~~4~~ was heard no matter how hard the work nor how long the hours. The traditional

versatility Dr. Johnson said of the hospital corpsmen has been again demonstrated. For the first two months the chief of the medical service had supervised the erection of tents. The urologist had been in charge of stores in the dock. The laboratory officer had been in charge of laying out walks pipes and concrete work. The X-ray specialist was in charge of digging latrines. The psychiatrist had become an expert in ~~pat~~ planning and directing shower baths. All sorts of latent talent was developed but in men whose relatively large salaries are justified because of their special training in medicine. It is a matter of general knowledge Dr. Johnson said that there is a shortage of these trained men in the Navy.

It was Dr. Johnson belief that when another mobile hospital was planned it ~~xxxxxx~~ would be much better to provide artisiferes and laborers to do the work of construction under the direction of the engineer and one of the senior officers of the hospital. The medical stores medical staff and hospital corpsmen should be sent to the unit about the time the buildings were ready to be occupied. In the meantime ~~thxxx~~ the premises should be available in some Navy activity.

It was observed that with the use of tents and protable buildings the latter or much more practical. The tents tended to deteriorate so rapidly that they were relatively useless after about four months use. A maximum of six months use could normally be expected from the tents. The advantage of tents is that they are easily transported and easily set up ~~but~~ and that they add materially to the mobility of a unit. But as for use as wards they are hot and dusty in the daytime and cold and damp at night. Additionally there is a serious fire hazard. Wards in prefabricated buildings have ~~h~~ many advantages the walls are high enough so that hospital beds of standard height can be used they are screened so that individual nets are not needed as they are in tents. Nursing care and physical examination

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are much easier in prefabricated buildings. The side walls protect against clouds of dust that sweep through the tents. The hinged shades protect from the direct sun and allow full ventilation. The comfort and well being of patients are much better in buildings than in tents.

The buildings used in this hospital were described by the manufacturer as portable or mobile but the term prefabricated gives a better impression. They are portable until they are set up but once they are erected and the ~~plumbing~~ plumbing and other fixtures are attached they can not be taken down and shipped to a new site ~~without~~ without serious damage.

The provision of suitable food for staff and patient in the field is a difficult matter. It is necessary to get along without many of the facilities which help make the work easier in these hospitals. For 72 hours following arrival in Guantanamo the medical staff subsisted on the transport that brought them there. Although not completely ~~satisfactory~~ satisfactory this arrangement was of great advantage. Early meals ashore were prepared and eaten among a cloud of dust and flies. Sixteen days after arriving the first screen mess hall was completed and occupied. But it was not until a week or so later that flies ceased to be a serious problem. No serious outbreak of gastrointestinal disease occurred during the early days of operation.

At first each man was issued a set of army field mess gear. The men were served cafeteria style and after each meal the men washed their own mess gear in ~~g i~~ cans of boiling water. This is a simple method requiring a minimum number of mess cooks. On the 44th day the dishwashing machines were operable and the men were served at tables using regular navy mess gear. All officers and men subsisted in the general mess.

Water for this experimental hospital was supposed to have been provided from the naval operating base at Guantanamo. This provision was not accomplish

prior to the landing however and it was necessary for the hospital unit to lay some 1700 feet of pipe to bring the water to the hospital site which took four days to accomplish. The daily average consumption of water was about 9,000 gallons.

Electric power in an adequate supply is a basic need of a mobile base hospital. Electric power has many advantages; the units are compact and can be ~~fix~~ mounted on skids or wheels so that they are mobile. They are safe to operate and almost fool proof. They can be concentrated in one place so that the number of watch standards is at a minimum. In this hospital at first the stoves and ovens were operated by coal and wood ~~fire~~ fuel. Lanterns sterilizers generators were operated by gasoline. Lanterns and refrigerators burned ~~xxxxx~~ kerosene. Motor generators used diesel oil. Steam boilers burned fuel oil. Procurement storage and distribution of these various fuels ~~w~~ required much time and labor. If all could have been operated by electric power for central power unit using a single fuel it would have been a great ~~n~~ savings in time and money. Dr. Johnson was ^{emphatic} ~~infatig~~ in his recommendation that all future mobile hospitals be planned for use in elimination machinery and all medical devices to be operated by electricity.

This hospital was an experimental unit. It was the task of the personnel to find out what was the best equipment the best means of transportation the most suitable personnel and the most appropriate method of organization and administration. Extensive recommendation on these subjects should result in instantly organization for any future hospitals of this type. Dr. Johnson pointed out that mobile was a relative term not a precise one. The hospital ~~was~~ designed to serve the armed forces ~~xxxxx~~ mobility may vary from that of a field hospital which should be ready for patients in a minimum time after landing to that of a base hospital usually fixed for the ~~fix~~ duration of a campaign. The present ~~hosp~~ hospital was mobile to the extent that it was transferred from New York and ready to receive a limited group of patients on

the 15th day of its arrival in a new location. Mobility was determined by the equipment . A field hospital has only meager equipment and is designed to render only a very limited degree of treatment hence it is very mobile. A base hospital is designed to provide much more elaborate service and so it should be firmly accurate by the weight of its equipment.

A hospital should be exactly as mobile as the military force that it is designed to serve. The degree of mobility that is desired should be one of the first decisions made and ^{then the} ~~when~~ equipment should be selected on that basis. Ability to move in two hours or two months or any other time can be achieved in this way.

~~Eliminization~~ Acclimatization of the men is a major factor in mobility. Dr. Johnson reported that when his men left New York they were fasty faced and flabby from prolonged city life. Immediately on arriving they were called upon to perform ~~an~~ the hardest ~~kind~~ kind of labor for long hours in excessive heat. They perspired profusely and drank great quantities of water. They were required to protect themselves from severe sunburn. Countless flies swarmed about them the trade winds stired up a continuous cloud of dust. About the third day men began to fall out from exhaustion and severe diarrhea but a month later they were bronzed stalwart men ~~n~~ in the most ~~an~~ envied state of health. In Dr. Johnston's later experience in the formation of Lion 1 and base hospital no. 6 this factor was of particular importance in the training period and organization of the unit long hours were ~~exp~~ spent in physically conditioning the men attached to the unit.

In addition to the experimental work on equipment facilities care of the patients was the important feature. The patient load of the ~~the~~ hospital increased until in February and March 1941 it was stabilized at around 240 patients. This required an organization of somewhat different from the usual naval hospital. There were many difficulties and clinical work

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in a tent hospital in the field which would not be encountered in a naval hospital. The staff attacked these difficulties with enthusiasm and many satisfactory ways of carrying them on were developed. With more than one thousand patients admitted during the period the hospital was located on Guantánamo there were only 2 deaths both from malaria complicated by pneumonia. It was an interesting fact that marines in ^{who are} the field ~~were~~ not engaged in actual combat hospital beds ^{will be} ~~were~~ required for three percent of the force.

Dr. Johnson completed his report by saying that while the hospital as a whole was much less mobile than had been anticipated they were able to send out a completely mobile unit of 100 beds to accompany a force of marines which went for several weeks of maneuvers to a base several hundred miles away. This small unit with its complement of medical officers and enlisted men established the hospital in a suitable location and operated throughout the exercises. Conditions of the actual needs for hospitalization of patients they practiced constantly with first aid and transportation of constructive casualties. An epidemic of mild contagious disease on one of the ships filled their beds almost to capacity and provided valuable information about the needs of such a mobile unit.

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MOB 103 Guam

Mob 3

TO BE SENT TO GENERAL DENIG, MARINE HEADQUARTERS, WASHINGTON, D. C.

FORCE HQTRS., STRAW AREA ----- With the advent of American-Japanese hostilities in the Pacific war zone on December 7, 1941, a plan for the establishment of numerous United States Navy Mobile Base Hospitals began to take form as the need for an efficient method of treating men of the Navy and Marine Corps who were wounded in battle became critical.

The Navy Mobile Hospital owes its innovation to the President of the United States, Franklin D. Roosevelt, and to the Surgeon General of the Navy, Ross T. McIntire. For a number of years prior to World War number II, these two men toyed with the idea of a Mobile Hospital, and as a result of diligent research and planning, their combined efforts resulted in the establishment of the first Mobile Base Hospital by order of the Secretary of the Navy on September 9, 1940.

The First Mobile Base Hospital was organized largely as an experiment. The personnel and adequate materials were embarked on a Navy transport on October 24, 1940, and reached a Caribbean Base at Guantanamo, Cuba, five days later. The establishment of this Mobile Hospital proved a criterion for future hospitals to go by, and the efforts of Navy men in the Caribbean has proved of immeasurable aid in the organization of the Second and Third Mobile Base Hospitals.

Construction on the Second Mobile Base Hospital began shortly after the Guantanamo unit was established. The site of this hospital was located near Pearl Harbor, and its completion was hurried as a result of the Japanese bombing attack at the outset of the war in the Pacific.

Mobile Base Hospital Number 3 is located on the Island of Tutuila, American Samoa, in the South Pacific war zone. This hospital during the past few months, although only partially completed, has been the site of an influx of casualties, wounded during the Solomon Island engagement. These men have

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received the finest medical care available, and many owe their lives to the presence of the most modern medical equipment, and skilled Navy doctors, at Mobile Base Hospital Number 3.

All three hospitals of the mobile type have a threefold task as part of the mission of the Medical Department---to erect the hospital and provide the best possible care for the patients, and to inform the Bureau of Medicine and Surgery concerning the suitability of equipment, personnel, organization, and administration.

The Third Mobile Base Hospital arrived in Pago Pago harbor aboard the USS Zeilin on April 28th, 1942. All materials and supplies for the hospital unit were loaded at Quonsett, Rhode Island, while the Naval Doctors and hospital corpsmen embarked from San Diego, California along with a convoy carrying United States Marines to Tutuila.

Upon arriving the personnel of the hospital found themselves without mess gear, beds, mosquito bars, nets, and tents. The men stayed aboard the ship until May 2nd when the entire unit moved to the site of the Mobile Hospital. The site selected for the construction of the hospital was located about eight miles up the shore line from Pago Pago, the capital of Tutuila.

The terrain at Tutuila is extremely rugged in appearance and few level spots are available. The area decided upon by hospital officials had access to a good water supply and was moderately level. The men camped out in the field in tents and unfortunately landed upon the Island during a period of heavy rainfall. There was much confusion during the first few days as the men pitched tents, and stood in driving rainstorms during chow time. On the whole, conditions were not exactly on the bright side and it was evident that a tremendous amount of labor would be required before the hospital could look anything like the original plans.

On May 23rd, the ship bearing supplies and materials from Quonsett arrived and the hospital corpsmen and officers began work in earnest. Limited docking facilities complicated the unloading situation, and thousands of boxes, bales, barrels, cartons and crates were dumped promiscuously about the dock.

Many days of labor were spent in finding articles which were urgently needed for the initial establishment. During the first few months the men had little or no tools. Shovels, picks, saws, hammers, and other tools for digging, leveling, clearing, opening boxes, etc., were not to be found, and as a result the hospital corpsmen found it necessary to improvise rough implements in order to carry on their work.

The first hospital at Guantanamo, which moved to Bermuda, later on, housed men and equipment in canvas tents, which ultimately proved a serious disadvantage. The tents were hot and dusty in the day time, cold and damp at night. The fire hazard was great. The flapping of the tent flaps was annoying to the patients and interfered with physical examinations. Due to numerous insects and the prevalence of malaria, mosquito nets were used on all beds, which added greatly to the difficulty of nursing care and increased the discomfort of the patients.

The First Mobile Base Hospital, during its early construction period, consisted of quarters and wards made of canvas and wood, which was some improvement. Finally the idea of "prefabricated" huts was hit upon and put into effect satisfactorily at American Samoa. All materials for Mobile Base Hospital #3 were loaded at Quonsett, Rhode Island, and the prefabricated huts are known as Quonsett Huts.

These huts have many advantages. The walls are high enough so that hospital beds of the standard height can be used; they are screened; the side walls protect against the clouds of dust that might sweep through a tent; and they can be kept much cleaner.

The first work was started on the roads in order that building parts could be transported through the jungle to their future building sites. The roads are made largely of cinders where were taken from the outlet of a spillover of a volcano and after the first rain the roads hardened and shed water like an asphalt highway.

Actual work on the hospital buildings was started on May 24th. Practically all the labor was done by the hospital corpsmen and officers. One Civil Engineer headed the construction work and all building units were under his direct supervision. It was not uncommon to see a Chief Pharmacist's Mate out shoveling dirt with the rest of the men. Laboratory officers, urologist, x-ray specialists, psychiatrists, and even surgeons have been in charge of such construction work as erecting buildings, laying water pipes, concrete laying, digging latrines and erecting shower baths.

Quarters for the hospital corpsmen were erected first and the first Quonsett hut was completed June 2nd. CPO quarters came next, and then a galley and mess hall. At the present time all enlisted men are quartered in the prefabricated huts, but no officer's quarters were constructed until September, 1942. A large portion of the doctors were living in tents until July, 1942.

A Headquarters office was established across the road from a two story frame house which at one time was the site of a Mormon church and school. At present, several officers are living in the frame house.

At present the mess halls are the same type Quonsett huts in which the men are quartered. The galley is located in the approximate center of the hospital area, and the patients in the wards are served chow from small push-cart containers which are rolled around to the wards, and the food served on china plates. China on the Island of Tutuila is considered a luxury to both Sailors and Marines alike.

The food is of the best and consists of plenty of meat, as much in the way of

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vegetables as can be obtained, and plenty of pie, cake, and other desserts.

There are approximately 12 hospital corpsmen to a hut. The men have been provided with large steel lockers and a prize is offered semi-monthly to the hut with the best looking entrance and surrounding grounds. The hospital corpsmen take great pride in the appearance of their huts, and everything from the forecastle of a ship to Uncle Walter's Dog House have been displayed in the front yard. The prize offered usually consists of three or four cases of beer, while a similar prize is offered for the men who capture the most rats, as a great many rodents are present at the site of the camp. One CPO has charge of each hut.

This particular hospital is the finest of its kind in the South Seas, and the equipment set up in the various offices is comparable to any in the United States. The doctors, with the exception of two men, are all specialists from civil life.

A large Dentist's office, which is housed in a Quonsett hut, has three complete dental chairs with full accessories, and is in charge of a Navy dentist who has two technicians working with him.

The X-ray department is capable of handling any type case. The office is equipped with a fluoroscope, and both a stationary and semi-portable x-ray machine. Such injuries as broken bones and the usual ailments diagnosable by x-ray are determined by this modern medical instrument.

The operating room is capable of handling all types of surgical cases and has five surgeons attached to the section. The hospital also has a modern eye-ear-nose-and throat office, and also a Genito-urinary operating room. All operating rooms are air-conditioned.

Since construction began in May such installations as a modern bakery, a large scullery, refrigerators, cold storage plant, two large water tanks, three generators for electricity purposes, and a modern plumbing system have been completed.

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The hospital corpsmen also constructed a large recreation hall which is equipped with about twenty card tables, a library, a phonograph-radio set with all the latest records, and numerous games which occupy the spare time of sailors and marines who are not on duty. The men have Catholic and Protestant church services every Sunday morning, while such activities as swimming parties, softball games, and basketball games confine most of the men to the grounds even during liberty hours. Lights go out at ten o'clock.

The hospital is also equipped with a modern laundry which is run by a Chief Pharmacist's Mate and six hospital corpsmen. Sheets, pillow cases, and other linen materials which are necessary to a hospital are laundered in this very modern laundry shop, while the men can have their clothes washed, starched, and pressed for the small sum of \$3.00 a month.

At the present date the Third Mobile Base Hospital has a personnel of 244 men. Approximately 90 percent of the hospital is completed and it is equipped to handle any emergency.

The hospital corpsmen, aside from their regular work, perform the following duties; procuring provisions, which include sending working parties to ships to break out stores; incinerator detail; procurement of fuel, delivery to hospital and distribution to many power units; operation of laundry; sanitation, clearing of brush, mosquito control; operation and maintenance of motor transportation; mess cooking and guard duty.

Although termed a "Mobile Hospital", this particular hospital is actually a Base Hospital, and will be fixed as such during the duration of the campaign in the Pacific. This hospital was mobile only to the extent that it was transported from Quonsett, Rhode Island, to Tutuila, American Samoa. A field hospital has only meager equipment and is designed to render only a very limited degree of treatment, hence it is very mobile. A Base Hospital is designed to provide a

much more elaborate service, and so it is firmly anchored by the weight of its equipment. Such is the case with Mobile Base Hospital Number Three. RTT

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Inspector of Medical Department Activities, Pacific Ocean Area, to
Chief BuMed, 16 June, 1945. Signed by R. H. Laning

Fleet Hospital 103

"The commanding officer and his staff are fully convinced that this is the best fleet hospital in the Pacific and intend to keep it so. The arrangement of huts and facilities is such as to make for maximum efficiency and ease of administration. It is actually a show place. The professional work accomplished at this hospital is of a high order. The plant is kept scrupulously clean, and its administration is excellent. The evacuation of tuberculosis cases presents a problem in the minds of the Staff of this hospital. Such cases do not do well in this climate so that it is desirable to evacuate them as soon as possible. The Staff is loathe to start collapse therapy when evacuation is to be by surface ships, other than hospital ships, for fear it cannot be continued while enroute and air evacuation is feared for these cases because, in their opinion, it is liable to incite hemorrhage. The latter point was taken up with the flight surgeons at the air evacuation center, and they state that in their experience tuberculosis cases stand travel by air very well, quite a few of such cases having been so evacuated recently from Leyte with no untoward effects.

There are two distinctive features of note in the construction of this hospital. In the first instance, in front of the hospital a long and wide covered concrete platform has been constructed directly accessible to all the wards by covered passageways where eight ambulances can be backed up simultaneously and stretcher patients removed, processed and bedded down... The other distinctive feature is the internal arrangement of Quonset huts used for officer's and nurse's quarters, partitions being so placed and constructed as to afford a combination of good ventilation, privacy and porch space."

Fleet Hospital 103 (BuMed, 1945)

Code named
"White Poppy"

MOBILE HOSPITAL NO. 5

Mobile Hospital No. 5 was organized and assembled as the medical supply Brooklyn, New York. Organization began early in 1942 with CAPT Frederick L. Conklin, MC, USN medical officer in command and CAPT Alvin L. Lindall, MC, USN as executive officer.

During the first five weeks of the organization period medical and dental officers attended a special course in tropical medicine at Cornell Medical School. This class was both didactic and practical provided much theoretically information as to the conditions likely to be met with when the hospital was set up in overseas locations. The organization period was also spent in refresher lectures in tropical medicine sanitation and navy organization routine. Requisitions were prepared and equipment s supplies were checked. The original organization consisted of 19 officers and 260 enlisted men. Supplies and equipment were first assembled at pier 96 Manhattan and later at Mazola pier Edgewater, New Jersey. The unit was transferred to the destroyer base San Diego on 16 June 1942. Here the training of all personnel continued. Supplies and equipment were loaded on SS STOCKTON and left San Diego 26 August 1942 arriving at ^{Neumea} ~~Neumoa~~, New Calodonia on 9 September 1942.

The personnel of the hospital on arrival consisted of 34 officers, 166 hospital corpsmen and 91 non hospital ratings who sailed from San Diego on the SS PRESIDENT MONROE 1 September 1942. After stopping at Pago Pago Somoa where the entire crew visited and inspected mobile hospital No. 3 at that location. Temporary camp facilities were established on 23 September 1942. Delay in unloading the equipment and building material owing to inadequate port facilities was encountered so that unloading was no completed until 10 October 1942. Building construction was started immediately and one month later on 11 November 1942 the galley, mass hall, laboratory, laundry, power house and 75% of the steel buildings were in operation. During the

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construction period quarters and subsistence were furnished to survivors of HORNET, WASP, PORTER and other ships that had been sunk during the battle of Coral Sea. Small numbers of additional patients were received and cared for during the construction period but it was not until 19 Nov. 1942 when the first large draft of patients from the battle area in Guadalcanal were received. Formal openings of the hospital was on 23 Nov. 1942 even though hospital care had been provided earlier. The first female nurses arrived on 25 March 1943.

The original rated bed capacity was 1,000 which the capacity was increased between July and December 1943 to 2,079. On 8 June 1944 the designation of the hospital was changed to Fleet Hospital No. 105. In addition to providing ~~NECESSARY~~ necessary hospital care the hospital also operated and maintained a large convalescent unit designed for preparing men to return to duty. Large numbers of ships and other activities were provided with medical stores from a sub unit of the hospital designated medical supply storehouse No. 1. Dismantling of the convalescent unit was to commence in January 1945. The bed capacity of the hospital was reduced to 500 beds in June 1945. The medical supply depot was disestablished on 17 November 1945 on 24 November 1945 negotiations were carried out with Army to reduce the hospital to a 150 bed dispensary under control of the Army. The dispensary was to care for Army and Navy personnel and the Army staff was to be augmented by 75 hospital corpsmen and 3 doctors 3 nurses and an administrative officer. 6 December 1945 was set as the day for the decommissioning of the hospital. During the life of the hospital a total of 23,866 were admitted for medical and surgical care. The greatest number under treatment at one time was approximately 2,100. Formal decommissioning of the hospital was 20 December 1945.

also FH 106

MOBILE HOSPITAL NO. 6 WELLINGTON, NEW ZEALAND

Mobile Hospital No. 6 placed in commission at the navy supply depot Brooklyn, New York on 25 June 1942 with CAPT Lewis W. Johnson, MC, USN commanding and CAPT Robert W. Wimberly, MC, USN as executive officer.

There were 33 officers and 319 enlisted men in the original organization. Of the enlisted men 204 were hospital corpsmen and 115 were other rates. On 30 June 1942 the organization was transferred to the Corn Products Pier in Edgewater, New Jersey from which supplies equipment and buildings were in the process of loading on ships for transfer to an overseas destination. On 11 July 1942 the entire staff personnel left New York on a special train for San Francisco. After an 8 days stay in the San Francisco area the entire staff were embarked on SS MT. VERNON for further transfer to an area in the Pacific. The ships docked at Wellington, New Zealand on 8 August 1942.

The site chosen for the setting up of mobile hospital no. 6 had been chosen in advance and this site was a partially completed new Zealand Army convalescent ~~convalescent~~ camp some 17 miles from Wellington. Mobile Hospital No. 4 which had previously arrived in the Wellington area was scheduled for removal to Auckland, New Zealand as soon as mobile hospital no. 6 could be set up and begun functioning.

The site of the hospital was in a locality known as Silver Stream in the Hutt River valley about 17 miles from Wellington. A narrow gauge railway runs by the foot of the hill on the southeast bank of the river and the hospital was being established on the level crown above a small stream which flows into the Hutt river at this point. Construction had already been completed where it was possible to house the hospital staff and feed them in a permanent fashion. The roads were muddy with red dirt tracks and there was little heat available. There was no heat in the mess halls or ward rooms. It was cold almost continuously rainy with occasional flurries of snow and hail.

The hospital was designed to care for 300 ambulatory convalescent patients, so that there were no facilities in preparing or serving food on the wards. A great deal of space was occupied by buildings for recreation including a gymnasium theatre lecture halls, reading rooms, pool rooms, and a cafeteria. These buildings in succeeding months were transformed into wards operating room, X-ray suite, and other clinics. The officers moved into quarters designated for SOQ and the enlisted men were put into wards in wooden bunks. The cooks set about to begin to master the peculiarities of New Zealand galley equipment. The first meal of cold sausage and very dense bread was one to remember. The interval between 8 August and 8 September was one of improvising borrowing and adapting to building equipment and supplies. The commanding officer and a detail of enlisted men went to Auckland on 10 August as a working party to help mobile hospital no. 4 erect some of its buildings and learn some of its peculiarities ~~xxxxxx~~ of this type of construction. The detail remained about 3 weeks before returning to Wellington and putting their knowledge to good use. Food supplies were procured through the New Zealand Army supplemented by a few items requisitioned from the marine supply officer. The first patient was admitted on the first day of occupation of the new site.

Only a small portion of equipment and supplies were transported with the medical staff. On 28 August the major portion of equipment and supplies for the hospital arrived on USS JUAN CABRILLO. The cargo handling on the docks was very unsatisfactory. Labor difficulties had forced the marines to unload much of their own equipment. Only the rear echelon of the first marine division remained in the Wellington area and the personnel of the hospital furnished most of the manpower for unloading the ship. Medical officers and other ~~me~~ officers and enlisted men worked in shifts for 24 hours for about ten days in unloading the cargo. Much of the cargo was not consigned to mob 6 but to other ships and other activities. Inexperienced hospital corpsmen with assistants of ² seamen and artificers assisted some marines unloaded the cargo and attempted to

sort out those items belonging to mobile hospital 6.

The major problem of equipping the hospital at that time and for many months thereafter was to break out things to operate the hospital and yet leave in storage sufficient materials and supplies to set up the hospital elsewhere in the event it was called on to demonstrate its mobility.

One deisel generator was installed as a standby to provide 110 volt current. The problem was encountered in hooking into the New Zealand power service since in New Zealand all power is transmitted in 220 volt capacity contrary to the 110 volt current standard in the United States and with which the hospital was ~~xx~~ equipped. This situation required the use of transformers or independent 110 volt supply for utilization of most of the hospital equipment. Since a nucleus of buildings were either already constructed or in process of construction the major portion of the mobile hospital building material were not at first used. The first large draft of battle casualties arrived on 8 September in USS SOLACE when 159 casualties were received. Transfer of patients from SOLACE to mob 6 was accomplished with relatively little confusion. SOLACE had classified and tagged the patients prior to transfer so that on arrival by hospital train the patients were quickly transferred to their proper wards in mobile hospital no. 6. The majority of the first draft of patients involved compound fractures from gunshot shell fragment or bomb explosion. There were many chest injuries and multiple soft tissue wounds encountered with relatively few abdominal ~~xxx~~ and head wounds. Many patients before reaching mob 6 had had a short period of hospitalization in advance base hospitals before arriving. All battle casualties received in the first 6 months had had such good early treatment that only 1 death occurred at the hospital as a result of combat wounds in that interval. The designation of the hospital was changed on 17 March 1943 to base hospital no. 4. It was necessary continuously to expand the ~~hosp2pi~~ hospital accommodations; during 3 September 1942 about 6,000 sick days of patients were recorded which number was

increased to more than 23,000 sick days in February 1943. During the interval from September 1942 through March 1943 4,604 patients were admitted; only 7 deaths occurred in that time. Three of these deaths were from malaria.

Mobile Hospital No. 6 acted largely as an evacuation hospital and all possible efforts were directed toward therapy and return of many patients to duty. Recreational and amusement facilities were utilized to an important degree. From the beginning of the activity of the hospital new zealanders have been very interested and helpful in contributing to the comfort and amusement of the patients and crews. The order of St. John new Zealand Red Cross early aided by giving pajamas bathrobes slippers and sweaters. Under the supervision of Mrs. Alice Dennistoun-Wood various amateur theatrical organizations produced weekly concerts or vaudeville shows. The actors and musicians worked hard to the ~~enxix~~ entertainment of the men even performing at first on mess tables on the crews mess hall. On three evenings a week motion pictures were shown and on Sunday evenings trinity scenes was conducted. Band concerts were provided by the New Zealand air force band. Many of the citizens in and around Wellington, New Zealand invited individuals and parties into their homes where the patients were treated with good cordially and friendliness.

The equipment and supplies including prefabricated steel buildings not used by mob 6 were sufficient to furnish the major requirements of another hospital. On 17 March 1943 base hospital no. 4 was created from these supplies and equipment and the majority of the medical staff of mob 6 was transferred to this new unit. CAPT Caney was relieved as commanding officer of mobile hospital no. 6 by CAPT T. L. Moring, MC, USN as medical officer in command and LCDR C. W. ~~Sixxix~~ Steele, MC, USN was the new executive officer. Mobile Hospital No. 6 was then placed in commission in

ordinary.

With the transfer of the original unit of mob 6 the hospital continued through the remainder of the year 1943 with an average patient load of about 700. Maintenance and new construction continued constantly since the original buildings had been put up hastily and frequently with inferior materials. Some of the new construction were of a permanent nature since the overall plan envisioned that at the end of the war the buildings would be utilized in the new zealand school program. Early in the year it became evident that the war was moving away from the South Pacific and that the hospital would no longer be required in this area. The patient load gradually decreased until 10 May 1944 when only 400 patients remained. Preparations which had been planned for some time proved begun in order to transfer all mobile equipment and supplies to a more forward area. On 12 June 1944 the designation of the hospital was changed to fleet hospital no. 106. On 16 May 1944 the hospital was placed in an inactive status. Equipment and supplies were placed in containers for transfer most of the personnel were transferred to other activities and the remaining medical staff were transferred to New Meaa, New Caladonia to await the assignment.

The hospital remained in an inactive status at ^{Noumea}~~New Mea~~, New Caladonia till 29 May 1945. At this time loading of supplies and equipment was begun an operation which consumed a month owing to the shortage of shipping space. All equipment and supplies were loaded on three ships and departed New Mea on 30 June 1945 for transfer to a forward element. The new destination was Okinawa. Although personnel with supplies and equipment arrived in Okinawa in July the end of the war was insight and so the hospital remained in an inactive status at Nakangasuku Wan Okinawa being quartered and billeted by special augmented hospitals no. 3 and 6. During this period construction of warehouses had been started but this construction was halted on 5 September 1945 since the war had ended. The 8 officers and 119 enlisted men who formed

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the medical staff of this hospital in its activity on Okinawa was ready to reestablish a hospital but owing to the end of the war the hospital was decommissioned on 20 November 1945. At this time it had been redesignated as fleet hospital no. 106. By 17 November 1945 the complement of the hospital had been reduced to 7 officers and 11 enlisted men.

*Name changed to Fleet Hospital 106
12 June 1944*

MOBILE HOSPITAL NO. 7 NOUMEA, NEW CALADONIA

Mobile Hospital No. 7 was commissioned at the medical supply depot Brooklyn on 9 July 1942 with CAPT C. R. Tatum, MC, USN as commanding officer and CDR T. E. Orr, MC, USNR as acting executive officer. CAPT W. C. Espauh, MC, USN assumed command on 20 July 1942.

The unit remained in New York until 26 August and at which time it was transported by troop train to the destroyer base San Diego where it remained for the next three months in going through organization procedures. During the stay in San Diego training lectures were accomplished and some of the personnel were assigned to the naval hospital at San Diego for temporary duty for further training in their respective specialties. Supplies and equipment were transferred from Brooklyn to Seattle Washington for further shipment to the overseas assigned area. The medical staff left San Diego on 27 Nov. 1942 proceeding to San Pedro where they embarked on the transport USS MT. VERNON. At this time the staff consisted of 32 officers and 249 enlisted men. On 8 Nov. the medical personnel disembarked at Noumea, New Caladonia. The supplies and equipment at the time of landing consisted of tents and field equipment only. The major portion of the supplies and equipment arrived shortly and the next 2½ months were spent in setting up the camp and beginning to get the field hospital set up for the receipt of patients. The area selected for the hospital site had been a cow pasture made up of a rather flat area surrounded by hills. The view from the hills overlooking Magenta Bay with Mt. D'Or rising on the far side of the bay. The early work on the hospital site consisted of primarily of grading and drainage work so that on arrival of the portable hospital accommodations construction began immediately which was accomplished rapidly.

The first patients were received on 22 April 1943 when 268 were admitted. By the end of the second week of operation there were 630 patients on board.

From this time onward the number of patients increased rapidly but most of them were further evacuated to the United States. Many evacuation parties numbered more than 400. Construction of the buildings for the hospital continued during these early months and by June 1943 more than 1,000 patients were on board. Overflow wards were created by the use of tents in which the less serious were accommodated. The first nurses reported on 15 July 1943. The highest number of patients received in the hospital at any one time during 1943 was on 24 December when there was 1,626 on board. By the end of 1943 the total capacity of the hospital was more than 2,000 patients. The hospital was placed in inactive status on 1 February 1945 and decommissioned on 14 November 1945.

Nomea

HISTORICAL DATA

FLEET

U. S. NAVAL MOBILE HOSPITAL SEVEN

Disestablished (2-1-45)
Decom 11-14-45
1943

U. S. Naval Mobile Hospital Seven was commissioned at the U. S. Naval Medical Supply Depot, Brooklyn, N. Y. on 9 July 1942. At this time Captain C. R. Tatum (MC), USN was Acting Commanding Officer and Commander T. E. Orr, MC-V(S), USNR was Acting Executive Officer. Captain W. C. Espach, (MC), USN reported on board 26 July 1942 and assumed command. The organization remained in New York until 26 August 1942. At this time the personnel were transported by troop train to the Destroyer Base, San Diego, California, remaining there for the next three months. During this time courses of instruction were given to the corpsmen. Some of them were assigned to the Naval Hospital at San Diego for temporary duty for further training in their specialties. The men were also assigned to various duties at the Base with some time being spent on the pistol range in construction and then in pistol practice. The officers also took a course of instruction on the pistol range.

The hospital gear had been sent to Seattle, Washington for shipment to our assigned area from that port. The hospital personnel left San Diego on 27 November 1942 and proceeded to San Pedro, California where they reported on board the transport U. S. S. MOUNT VERNON. At this time the personnel consisted of thirty-two (32) officers and two hundred forty-nine (249) enlisted men. About twelve (12) days later they disembarked at Nomea, New Caledonia. The equipment at the time of landing consisted of the tents and field equipment that had been obtained about three weeks previously.

157 The next two and one-half months were spent in setting up the camp and the beginning of getting the hospital site ready for the construction of the hospital. The area selected for the hospital was a cow pasture made up of a rather flat area surrounded by hills. The view from the hills overlooked Nagenta Bay with Mount D'Or rising on the far side of the bay. The liberty ship that brought the hospital equipment arrived in the outer harbor of Nomea on 4 January 1943. This was the beginning of the actual construction of the hospital. Some of the grading and drainage work had been done previous to this time. The first wall panel of the first building was erected on 12 February 1943. From then on construction went rapidly. U. S. Naval Construction Battalion outfits had been assigned to help with the construction of the buildings, but a great deal of the original work was done by the corpsmen and other hospital personnel. During construction, eight different Naval Construction Battalion outfits were working with no units at two to three weeks intervals, when no help was available. The first patients were received on 22 April 1943. Two hundred sixty-eight (268) patients were admitted on this date. 34 By the end of the second week we had six hundred thirty (630) patients. From this time on the number of patients continually increased with variations resulting from evacuation of patients to the States. Some evacuation parties numbered over four hundred (400) and on other days we would receive an equal number of patients brought to the hospital by ship from the islands to the north. Construction of the hospital was continually going on as patients were received before completion of the buildings. To use as many of the prefabricated buildings as possible for patients the officers' and nurses' quarters were constructed of Native material as was also the Sick Officers' Quarters. These Native huts were first built by local Natives but the Corpsmen soon learned how to build these and were able to construct them faster than the Natives. The crews' quarters were constructed of lumber. On 2 June 1943 the Commanding Officer reported a total bed census of one thousand (1,000). Some of these beds were in the tent city which had originally been erected for the crews' quarters. The patient census reached one thousand (1,000) on 20 July 1943. At this time there were six hundred thirty-six (636) patients in permanent hospital beds and three hundred sixty-eight (368) in tent city. The first

nurses reported on board 15 July 1943. On 11 August 1943 the rest of the complement of nurses reported, giving the hospital a complement of forty-eight (48) nurses. The nurses proved to be a valuable aid to the surgical service, not only in the care of the patients but in training Corpsmen. The training of Corpsmen was a definite part of the work of the hospital. Not only were Corpsmen attached to the hospital being continually transferred to ships and to independent duty when they had been advanced to the higher rates, but Corpsmen were also attached for temporary duty for further training and were then returned to their original outfits. During July, 1943, the construction the hospital annex was begun. This construction progressed slowly as there was a frequent change of Construction Battalion outfits assigned to this work. This portion of the hospital was not put into service until the end of December, 1943, at which time the N. P. department was transferred to the hospital annex. The highest number of patients in the hospital at any one time during 1943 was on 24 December when there were one thousand six hundred twenty-six (1,626) patients. By the end of the year our total capacity was just over two thousand (2,000) patients.

W. C. Espach

W. C. ESPACH
Captain (MC) USN
Commanding

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MOBILE HOSPITAL NO. 8 GUADALCANAL

Mobile Hospital No. 8 was commissioned on 12 August 1942 with CAPT William H. H. Turville, MC, USN as medical officer in command. CAPT J. S. Terry, MC, USN was the executive officer.

The hospital was commissioned at the navy medical supply depot Brooklyn, New York. On 21 August 1942 the unit established its headquarters at Edgewater, New Jersey in preparation for further transfer to an overseas location. On 15 September first orders were received to move personnel and material to San Diego, California for further assignment outside the continental limits of the United States. The actual departure from New York was on 10 October 1942. The unit consisted then of 33 officers and 254 enlisted men. The unit arrived at San Pedro, California on 15 October. On 15 February 1943 after three months of intensive training and continued organization the message was received to proceed to Cactus. Loading of supplies and equipment on board SS JEAN LYKES began on 20 February 1943 and 1400 tons of equipment was loaded in the next 48 hours. On 23 February the JEAN LYKES sailed with all equipment accompanied by six officers and six enlisted men. Shipping cargo space being at a premium at this time the staff and equipment were transported to Guadalcanal (Cactus) in three different ships. The other two were SS LUELIHU THOMPSON and the USS ROCHAMBEAU. The advance party of the hospital arrived at Guadalcanal on 4 June 1943 after a stop at Espirito Santa.

Guadalcanal had been the scene of action by the first and second divisions of the marine corps from August 1942 until the island was declared secure in January 1943 when the majority of the marine corps divisions were relieved by Army troops. Although the major portion of Guadalcanal was declared secure there still remained a sizeable number of Japanese in the mountains. Further more the action of the fleet and marine corps units in nearby islands including

Rhendova, Boganville, and New Georgia only a few hundred miles away was at the height of action. The jungle of Guadalcanal was not ideally situated for a hospital yet the conditions of the war required provision of a hospital as far advanced toward the active war as possible. Sanitary conditions were deplorable since only shortly before arrival of the mob 8 unit it had been a bloody battleground. ~~Malarixi~~, Malaria, gastrointestinal diseases and dysentery were rife. During construction on 9 May the worst storm that had been recorded on Guadalcanal for more than 30 years was resulting in several million dollars worth of damage to small boats and other equipment including some of the equipment of the hospital. The island was still subjected to frequent night air raids but despite harassment from the enemy and the elements construction worked proceeded. All equipment and supplies was not completed unloading until 7 June 1943. A medical supply facility/^asub unit of the hospital was ready for issuing medical supplies on 28 June as were all of the mobile hospitals mobile 8 was designed originally and planned for a bed capacity of 1,000. In July 1943 before construction was completed this bed capacity was increased to 1,750 beds. It was planned to have 1,500 beds at the main hospital with the satellite hospital on Koli Point of 250 beds. This satellite knpi hospital was immediately dubbed little mob 8. Frequent transfers in and out of these base hospitals occurred and mob 8 was no exception. In July 50 hospital corpsmen were transferred for duty further north in the impending Munda and Rhendova campaigns. Of this group 2 hospital corpsmen J. W. Boone H. A. Mark and C. E. Cornett were killed in action on 18 July 1943.

By 7 August 1943 the ~~knxptx~~ hospital was declared ready to receive up to 400 patients.

The camp site provided to house the enlisted personnel was named camp Jendreau in memory of the Pacific fleet medical officer who had been killed while on a tour of inspection some months earlier on Guadalcanal. Camp Jendreau

and consisted of 29 ~~6~~ 16 by 16 wooden/screen bungalows; 25 16 by ~~1~~ 40 quonset huts on the site of the original camp. The total bed capacity of the hospital was rated at slightly more than 1,750; however by double decking some of the larger wards the bed capacity could be increased to more than 2,500.

The water supply was obtained from the Teneru river. Water was pumped from the river ~~int~~ three quarters of a mile to a 126 thousand gallon tank on the hospital grounds. The water from this large settling tank was coordinate and adjusted for flocculation filtered and ~~then~~ ~~then~~ pumped to four elevator 15,000 gallon tanks located in four different sections of the hospital complex. The gravity flow from the elevated tanks was piped to all buildings in the hospital compound. For fire fighting purposes the water could be pumped directly from the larger tank to a distribution system under high pressure. Electricity for the ~~hospital~~ hospital was provided for by portable diesel generators. Repeated air raids continued to be a problem throughout the existence of the hospital. To provide shelter for the patients and staff during raids a large armoured magazine hut was situated in the center of each clinical group of wards. The shelters were designed to withstand any blast except a direct hit and provided protection for the more serious patients. Large fox holes and individual fox holes were in abundance scattered throughout the hospital. Fortunately no skips were sustained on the hospital area during these raids. The first female nurses arrived about ²⁵ 1 March 1944. The recreation hall and theatre building was named in honor of the two hospital corpsmen who had been killed in the Rendova assault; the building was appropriately named Boone Cornet auditorium.

Between the opening of the hospital and 31 December 1944 39,076 patients were admitted of whom 24,218 were evacuated to rear area hospitals 14,365 were discharged from duty and 70 died. The average patient load during this period was more than 1,000. The largest number of patients evacuated to the rear area

in one day was on 1 January 1944 when 865 were transferred. The peak load of patients was reached during October 1944 at which time 2,544 patients were on the sick list. The hospital remained in commission actively until 23 July 1945 when it was put in active ~~sxx~~ status. It was decommissioned on 26 September 1945.

MOBILE HOSPITAL NO. 9 BRISBANE, AUSTRALIA

This mobile hospital was commissioned on 13 May 1943 in command of CAPT H. A. Bruckshaw, MC, USN. The hospital was decommissioned on 6 January 1945.

MOBILE HOSPITAL NO. 10, RUSSELL ISLANDS

Mobile Hospital No. 10 was commissioned on 26 August 1943 on Russell Islands in the Solomon Island group. It was decommissioned on 25 September 1945.

MOBILE HOSPITAL NO. 11 GUAM, MARIANAS ISLANDS

Mobile hospital No. 11 was commissioned on 6 December 194⁴ at
Guam, Marianas Islands. It was decommissioned 15 of November 1945.

MOBILE HOSPITAL NO. 12

This hospital was organized in 1943 but was never erected and never admitted a single patient.

MOBILE HOSPITAL NO. 12 MR RUSSELL ISLANDS

The original unit of this mobile hospital was assembled at the medical supply depot Brooklyn, New York in the spring of 1943. After preliminary planning and indoctrination the officers and enlisted men assembled at Shoemaker, California for final screening training and equipping. The unit was placed in commission at Shoemaker on 17 September 1943 with CAPT William D. Small, MC, USN as commanding officer. The unit at that time consisted of 31 officers and 340 enlisted men.

Early in December 1943 all personnel and equipment was made ready for trans shipment overseas. With all in readiness ~~the~~ the freight cars alongside a ship date of departure was set for 17 December. The change of orders was received and instead of loading the equipment aboard the ship it was transferred to the Army region depot at Lathrop, California. The majority of the medical staff was ordered to temporary duty in the 12th naval district. During the next three months mobile hospital no. 12 was to have six different commanding officers, the final one being CAPT J. M. Brewster who reported on 12 March 1944.

Not only were orders received changes made new commanding officers appointed but there was a large turnover of all personnel. On 14 February the complement was 26 officers 513 enlisted. On 2 March orders were received for the transfer of all personnel except three hospital corps officers and 50 enlisted men. Subsequent ~~orders~~ orders directed that all remaining personnel be ready for embarkation on 4 April which orders were canceled on 2 April. On 14 April all equipment and material was loaded on the SS JOHN CARROLL. After all loading was complete orders were received from CINCPAC to unload. Owing to the high priority of the top loaded material however the ship was ordered to sail and the material was to be unloaded at ~~Manas~~ Manas Island in the admiralty group. The remaining personnel were embarked on the SS MT. VERNON on 26 April 1944. On that day these orders were countermanded

and personnel were embarked and debarked on the SS MONTICELLO which sailed on 28 April from San Francisco.

On 13 May at New Mea, New Caledonia the personnel were sent to the receiving ship for two days when they were embarked on the SS SLOTERDYCK. This ship arrived at Manas on 29 May. Personnel being kept on board till 7 June when they were moved to the camp of 11 Seabee battalion. Conditions there were very bad and the camp site was muddy the tents damaged and there was no light water or decking furnished. Eventually the unit was reembarked on the SS JOHN CHERAL FOR return to the Russell Islands. Meanwhile the designation of the unit had been changed to U. S. Fleet Hospital No. 112.

The hospitals unit now consisting of ~~first~~ three officers and 48 enlisted men arrived at Banika Russell Island on 1 July 1944. On 5 July the unloading of the JOHN CARROLL at White Beach was completed. The material that had been splendidly loaded at Oakland now presented the appearance that a gigantic coal truck had driven slowly along leaving in its wake a huge pile of jumbled crashed crates and boxes. In addition but only two of the 40 by 100 prefabricated ~~mini~~ buildings were ~~available~~ available for storage perishable materials. Immediate overhaul of supplied and equipment was begun and a camp established in the swampy end of the receiving station Russell Islands. By means of much scrounging forklifts cranes and bulldozers were secured and improvement of living conditions and the handling of material occurred. ~~Medical dental hospital and supply corps w~~ Medical dental hospital and supply corps w officers numbering some 30 reported ~~and~~ and were assigned to appropriate duties in the unit and were given temporary additional duty elsewhere on the island. On 24 July CAPT Brucer was relieved as medical officer in command by CAPT Roger D. Mackey who was to continue in command until decommissioning.

The transfer of all officers except the medical officer in command two hospital corps officers one supply ~~corps~~ corps officer and one civil engineer

corps officer was accomplished on 8 August 1944. The enlisted personnel were received and transferred with considerable frequency but a nucleus of about 50 men who had been within a sense commissioning was maintained. During the following months overhauls and restacking of material continued. Additional material and equipment to bring the hospital to the level of the approved board for standardization of mobile hospitals was secured and ordered shipped from the United States. Additional portable buildings were required for the storage of perishable items and these were requisitioned from the United States. During the remainder of 1944 and early 1945 training and instruction went forward along with the arduous work of sorting and preserving the supplies and equipment was accomplished. Men were advanced as qualified ~~xxx~~ and two were ~~xxxxxxxx~~ promoted to pharmacist. Morale was high despite several disappointing periods when anticipated for movements were ordered and then canceled.

After a number of false alarms orders came from COMSOPAC to embark personnel on USS LIVINGSTON to proceed to target. Supplies and equipment was to be left in charge of the medical officer in command of fleet hospital 110 for later shipment. Requests to leave an officer and three men behind was refused by COMSOPAC.

On 6 July 1945 LIVINGSTON sailed from Banika with all personnel on board. One of the men has written "except in times of extreme crisis affecting all persons equally mass emotions are not easily yielded to analysis. Still its safe to say that behind the predominant note of pleasurable assignment lingered an undertone of regret. Even the Pacific islands showed some advantage after a year of familiar association. And Banika had not been altogether inhospitable. Within various limitations it had provided swimming, fishing and other sports essential cleanliness and overall the time and opportunity to form solid friendships. Not even
the

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the most indifferent could leave that without some reluctance!"

During the following six and a half weeks stops were made at Guadalcanal, Espirito Santos, ^PNeumea to pick up similar units with their housekeeping gear and ~~ixm~~ loading them aboard ~~ix~~ LIVINGSTON. The fleet hospital 107 was one of the units picked up and this unit was to have been decommissioned^A at target with its material and personnel to combine with 112 to constitute a 2,000 bed hospital. After stopping at New mea LIVINGSTON proceeded to Enowetok thence to Ulysses. At Ulysses on 10 August came the news of the Japanese surrender offer. The ship~~x~~ departed on 14 August and the following day a peace was announced. Okinawa was reached on 20 August 1945. All personnel were debarked on 21 August to receiving station Kuba Saki. All was confusion. The hospital was not to be erected where an ^Aearly photographic reconnaissance had been suggested displacement. When it was erected rumors had it to be a 1,000 bed hospital then a 500 bed hospital then a no bed hospital. As soon as camping materials could be assembled (unit gear was bottom loaded on the LIVINGSTON) a camp was established on base hospital no. foresight near the native village of Kishaba. Rain was torrential and almost continuous. Eventually a satisfactory camp was established and 225 officers and men who had arrived from the west coast on 13 August were removed from the special augmented hospital no. 4 camp. On 13 September 330 men arrived from the United States. No tents being available a temporary bivwac area was established. On the 15th of September which a typhoon struck ~~wixx~~ completely destroyed the bivwac area and did considerable damage to the permanent camp. Minor personnel injuries were sustained.

Unloading of the main shipment of materials from SS WILLIAM PFEFFER was begun on 9 September. The typhoon which did considerable damage to shipping beached several barges with 112 material on board. Later despite guards 150 ft. refer was stolen from one of these barges in some minor difficult from the stand. The camp had been restored and enlarged and unloading was

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almost complete when on 9 October the worst typhoon experienced in the island in more than 40 years occurred. Although every effort was made to prepare for the blow after it was ~~only~~ ^{over} only two administration tents and one living tent were left standing. Wooden structures housing the galley and mess hall officers mess power plant and other similar units were completely destroyed.

A native house and stable supplied shelter for some 200 officers and men the rest were scattered to numerous caves and tombs in the vicinity. During the blow it was seen that further efforts towards leaving the camp was useless so all hands were directed to take shelter. ~~Three~~ Three officers were injured one seriously enough to be evacuated to Guam and one enlisted man sustained minor injuries. As soon as the typhoon blew itself out reconstruction efforts were begun. Hot meals were served at noon on the second day and reconstruction was aimed toward the provision of a smaller more compact hospital. During this time discussions were in progress concerning the ultimate hospital set up. Decommissioning of fleet hospital 112 had been recommended and on 11 October this was approved by CNO. On 27 October 1945 orders were issued directing the transfer of all equipment and material to the commanding general, Okinawa base command. This transfer of material and excess personnel was continued and fleet hospital 112 was decommissioned on 29 November 1945 after ~~the~~ an existence of 26 months and 3 days. By receipt and transfer approximately 1,400 officers ~~and~~ and men had served with it during its existence. It never operated as a ~~large~~ hospital unit and never admitted a single patient.

MOBILE HOSPITAL NO. 14

The original personnel for this hospital were assembled at the medical supply depot Brooklyn, New York in the latter part of 1943. Since the unit was not immediately needed almost a year was consumed in assembling additional personnel and completing requisitions for equipment and supplies. The original unit consisted of a commanding officer executive officer a few medical officers hospital corps officers and six pharmacists mates. This nucleus was transferred during July and August 1944 to San Bruno for further organization and readiness for further transfer to an overseas destination.

Following the commissioning of the hospital the officers and men were assigned to temporary additional duty at various medical activities in the San Francisco bay area with a nucleus of being retained at the base at San Bruno for administrative purposes. The unit was alerted on 30 December 1944 and preparation for embarkation were begun. All personnel were ~~required~~ recalled to the depot at San Bruno and embarkation and loading was completed on 10 January 1945. The destination of mob 14 renamed fleet hospital no. 114 was Leyte where the ship carrying the unit arrived on 10 March 1945. On 12 March 1945 the unit was transferred to Samar and the personnel and materials were begun to be unloaded on 28 March 1945. Unloading of material and equipment was delayed until 22 April owing to the fact that the sight for the hospital had to be cleared in the jungle.

Originally designated as 1,000 bed hospital the capacity was increased to three thousand beds by incorporating fleet hospital no. 109 and fleet hospital 114 into one unit. Construction of the hospital was started on 25 April 1945 and ~~aided~~ aided by the Seabees the hospital was completed and available for 1500 patients on 2 July 1945. On 4 July 1945 the hospital was officially placed in operation. In the first two months of

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up th 31 August there were 5,684 admissions.

The first draft of patients from the hospital ship was received on 6 July from USS BOUNTIFUL. On the following day the first patients were evacuated to the United States by ambulance plane. During the first two months of operation approximately 55% of the patients admitted could be and were returned to duty with the remaining 45% evacuated to the United States. One of the major functions of fleet hospital no. 114 was to serve as an evacuation center for the Philippine islands. The hospital was designated as a neuropsychiatric center. The first female nurses arrived on 7 July. During July 1945 2,222 patients were admitted of whom 375 were discharged to duty 179 were evacuated to the United States and one died. ~~the~~

With the expansion of hospital facilities to three thousand beds it was necessary to acquire more medical staff. Medical officers and enlisted personnel of base hospital no. 2 were transferred to this hospital for temporary duty to fill in this gap. During August 1945 3,594 patients were admitted an average of 116 per day. To accommodate this rapid influx of patients it became necessary to evacuate patients in large drafts by way of ships. Patients available for evacuation were designated by the medical officer and the patients records were immediately completed so that the patients could be transferred. The port director arranged for several ships to transfer the patients to the United States. The ships were carefully checked to ~~make sure~~ ^{insure} ~~that~~ that adequate medical staff and supplies were available with proper treatment of the patients en route. Daily ambulance plane flights ~~in~~ afforded immediate evacuation of all emergency patients.

On 4 August 149 survivors from USS INDIANAPOLIS were received. Upon arrival at the hospital these patients were immediately admitted to wards which were opened exclusively for their use. Emergency treatment

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was ~~taken~~ accomplished in the operating suite made available.

Two patients ~~xxxx~~ who were suffering from burns expired on the rescue ship en route to the hospital. All these men had been in ~~xxxx~~ the sea for more than five days before being rescued and they were suffering from immersion which however responded rapidly to ^{order} therapy. In ~~xxxx~~ to maintain security regulations it was necessary to confine the survivors to their wards during their short period of hospitalization at this activity and to enforce complete censorship on all news pertaining to the INDIANAPOLIS until the news was ~~fixed~~ officially released in Washington. On 13 August all the survivors ~~except~~ 18 of the more seriously wounded were ordered to the island command at Guam and were transferred by air. In order to expedite return of patients to their duty stations three days a week were designated as duty party days while emergency discharges were handled seven days a week. No patient was ever ~~detained~~ detained unnecessarily in the hospital due to lack of severity. Crews were kept working in the personnel office in three shifts around the clock. Considerable additional clerical work was required since many patients were received without records from their parent activity.

During August 1945 a ^{BACILLARY} ~~basillary~~ dysentery epidemic occurred aboard the ships in the Leyte-Samar anchorage. To aid in bringing this epidemic under prompt control authorities directed all ships to transfer all the basillary dysentery patients to this hospital. There were 356 admissions for this reason. These patients ~~were~~ were isolated in special wards. The majority of the patients were returned to duty approximately 5 days after admission. The ^{efficacy} ~~efficiency~~ of the precautionary measures instituted within the the hospital proved of merit in that ¹⁰ ~~most~~ staff or inter

intercorrected missions were recorded for this condition.

The close proximity of the hospital to the naval air base was an important feature in the receipt and evacuation of patients by air. In view of the topographical features of the Philippine islands air travel was necessary for emergency patients. The majority of the patients transferred to fleet hospital 114 from Manila area were by air. During the last ten day of August 750 patients were flown from Manila to fleet hospital 114. A large number of outpatient treatment and consultations were accomplished by the hospital in service to various activities and ships in the harbor. These services were performed in the receiving room ~~xxx~~ without officially admitting the patient to the hospital.

As an indication of the enormous amount of work involved in construction of the hospital of this type the following figures are typical:

1) There were 522,000 man hours spent in construction during the period 1 May to 31 August 1945; 2) there were approximately 125,000 cubic yards of fill used on the hospital site; 3) approximately $3\frac{1}{2}$ miles of pipe were ~~m~~ laid for sewage disposal not including interior plumbing; 4) approximately $4\frac{1}{2}$ miles of pipe were laid for water distribution not including interior ~~pm~~ plumbing; 5) approximately 21 miles of wire was used for power and light distribution not including interior ~~w~~iring; and 6) approximately 5 miles of coral dirt road were built.

Owing to faulty shipping loss of equipment ~~xxxx~~ en route and in loading and also to the elements a great deal of on the sight fabrication of equipment was necessary and indication of the enormity of this on the sight fabrication is shown by the fact that among those items constructed were 36 galvanized metal service sinks; 20 galvanized pantry sinks, 3 galvanized bathtubs, 2 galvanized sitz baths, 500 wood bed side lockers, 50 office tables, 20 office

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desks, 23 typewriter desks, 200 hot lockers, 100 dressing tables, and 4 stainless steam tables for the main galley.

The air condition units for the operating rooms requested early in April 1945 were not received. There were 4 second hand Australian made air conditioning units brought up from Brisbane but the motors had to be rewound before they could be used since they were designed for 220 volt current. Additional ~~xxxx~~ state side units were secured locally for the remaining operating fleets and the X-ray department.

SPECIAL AUGMENTED HOSPITAL NO. 3

The hospital facilities designated as special augmented hospitals were planned as small units providing accommodations for no more than 400 beds but designed so that they could be set up as close as possible to the battle action. The enlisted complement of these hospitals and specifically No. 3 consisted of 180 hospital corpsmen and 70 enlisted men from the Artisan Branch. The original unit of Sah 3 was ordered to the advance base personnel depot San Bruno, California in July 1944 for further training and transfer. A rigorous six weeks program of training and combat conditioning at San Bruno immediately began. In December the unit was transferred to temporary duty at naval hospitals in Shoemaker, Oakland, and San Francisco for further professional training. Organization and collection of supplies and equipment continued until the unit was officially commissioned as a separate command on 10 March 1945. CDR C. N. Caldwell was the medical officer in command with CDR E. F. Merrill as executive officer. The unit was embarked on the SS DAY STAR at San Francisco on 20 April 1945 for transportation to the western Pacific. Stops were made en route at Port Hueneme Pearl Harbor, Eniwetok, and Ulysses in the Marianas Islands. The convoy left Ulysses on 29 May headed toward the home waters of Japan. The war had been reached in earnest on the 50th day out of San Francisco when the DAY STAR arrived in the vicinity of Okinawa. Japanese kamikaze planes were in this late phase of the war making suicide dives on any ship in sight. Despite the Kamikaze threat and need for threading its way through mine field all week the ship arrived at Okinawa in the first week in June. An advance party had come ashore on 29 May and within two days preparations for the construction of a hospital was under way. The site of the hospital was near the village of Myazota Okinawa Navy No. 3256. Special augmented hospital No. 6 had proceeded no. 3 into Okinawa and had erected some ward tents and a mess hall with the assistance of the 27 79th construction battalion. These structures

provided shelter and hot food for the weary drenched personnel who utilized these ~~xx~~ quarters pending erection of permanent quarters of their own. Although the major portion of Okinawa was now in the hands of United States troops there still remained sizeable numbers of Japanese dug in on the north side of the island. As a consequence security guards were required to patrol the area day and night and these sentinals were posted. Terrential rains made almost virtually impassable bogs out of the roads and highways and kept the ~~men~~ almost continuously wet during the first few weeks ashore. The men worked wet ate wet and slept wet.

In all this moisture however water for drinking had to hauled in tanks with armed guards aboard every truck. Supply trucks when road conditions permitted their operation also carried guards. Working alongside the Seabees the hospital corpsmen cooks, bakers, and all other rates represented on the hospital roster turned to in the work of draining roads and clearing sights for the erection of ward personnel treatment administration and storage tents. Two weeks of fine weather and unexpected in what was believed to be the heights of the rainy season permitted rapid progress in construction of the hospital and this pleasant weather was taken full advantage of. Not a single man was lost through either disease or ~~xxxxxx~~ hostile soldiers. The hospital was ready for operation on 5 July and was called in to service on that date and a huge ammunition dump near the Kadena air strip five miles away caught fire and was destroyed. Fortunately although prepared no casualties were ~~xxxx~~ received from this fire and explosion. On 6 July 33 days after the first contingent of medical personnel set foot on Okinawa the first patient was admitted. This patient was the town ~~Gaxxi~~ garitey, PFC, USN MC who was suffereing from a gunshot wound in the foot. On the next day 47 patients were admitted and the regular routine of ~~xxxx~~ hospital operation began.

In the next 3½ months period during ~~with~~ which Japan's capitulation ~~2~~ occurred and the war came to a close special augmented hospital No. 3 administered

to 3,288 patients. Casualties were received from all sources, from ships at sea from air units and from sniper activity. Most of the new casualties treated were able to return to full duty status. Those requiring prolonged treatment or convalescence were evacuated chiefly by air to fleet or base hospitals destination unknown. Most of these casualties went either to Guam or directly to the United States. Among problems encountered was a sudden influx on one hectic night of a total of 64 victims of ethyl alcohol poisoning. On 10 August the announcement of Japan's willingness to abide by terms of Potsdam surrender agreement a wild fire street celebration was touched off in which the entire island and ships surrounding it ~~xxxxx~~ burst up in flame and steel from guns which brought in a large group for emergency treatment. So heavy was the daily admissions of patients that the capacity of the hospital was raised to 500 and even that figure required the use of additional costs in reserve for sudden emergencies. The peak patient load was reached on 20 September ~~12~~ when the census reached 462.

Despite the provision of accommodations for far more patients ~~xxxxx~~ than the original complement called for the hospital took on another chore. With the help of the special augmented hospital No. 6 operating on the same general area the personnel from special augmented hospitals no. 4 and 7 and fleet hospital no. ~~fx~~ 106 along with smaller portions of fleet hospitals 104 and 107 were fed and housed in special augmented hospital No. 3. These units which had been transferred from areas further back in the island hoping were never set up for patients in Okinawa. In addition frequently members of other units were sent to the special augmented hospital No. 3 for housing and messing and the hospital kept its mess hall open constantly for transients who required feeding.

It was from either enemy action or overcrowding however that special augmented hospital no. 3 was to meet its most severe test a test in which complete disaster towered overhead on the wings of a typhoon. The first hint

of what lay in store for that unit came early in July. Storm warnings were posted nothing approaching heavy winds appeared. On 1 August the initial act typhoon warning was received. Condition 3 state of preparation for high winds was set up but again no dangerous turbulence was experienced. Nonetheless a typhoon shelter was prepared. ~~XXXXX~~ Wrecked houses in a nearby village were torn out and heavy stanshions and rafters were constructed to support a roof made by spreading tarpolin over frame work and anchoring them with sand bags. This shed covered an area 48 ft. by 60 ft. when it later proved its workh another similar shelter was erected.

On 16 September condition three was followed quickly by condition 2 and then condition 1 a warning of the full effect of a typhoon to come. During twelve hours that afternoon and night winds reaching a velocity of 70 knots tore at canvas and wooden structures bending frames like saplings tossing all loose debris through the air and hurtling heavy rains throughout the area. The patients were the first concern of the staff and with the bed ridden moved by ambulance to a typhoon shelter the ambulatory patients were transferred to wards which were in provision to receive the fullest protection ^{from} ~~the~~ the terrain and from shrubbery. Sick officers were moved into quonset huts and the surgical area and the overflow ~~sfx~~ bunked and spare ambulances. All hands stood ready to lend aid to damage control parties and to rescue personnel in ~~dxnxx~~ danger by destruction of buildings. Despite all preparations 12 personnel tents were destroyed in the storm and 2 of them were ^{severely} damaged and there was mild damage to medical supply tents. Neither patient or staff personnel suffered any injuries ~~x~~ in this typhoon. They were not to be so fortunate however during a subsequent gale which was first announced on 7 October. On the evening of 8 October condition 1 again was set. All hands once more turned to the task of moving seriously ill patients to shelters and transporting others who could walk to wards considered to be the safest. *H*

Personnel tents strengthened with wood frames after the first storm were firmly

secured with guidelines everything movable was lashed down as an additional safety measure. By the next morning 9 October the winds still was increasing in violence. Wind forces amounted to 65 knots and tents trembled periodically. The maintenance officer ENS Cox in charge of making preparations for breasting the gale was put out of action early not by the storm but by a flare up of an acute appendix condition necessitating immediate surgery. While the operating room, quonset hut and quivered under the onslaught of the elements Mr. Cox went under the knife. For the next 24 hours the hospital and its personnel were subjected to terrific gale. Gusts of wind were recorded with a velocity of above 100 knots and these gusts hurled steel and wood and canvas through the air as if they were bits of paper. The typhoon was reported by natives as being the worst in Okinawa's history. The fruits of months of labor were mere twisted splintered tattered wreckage. On the morning following the cessation of the gale an official survey revealed that all hands were mustered except 7 who had been injured, 3 of whom were seriously injured. Fortunately and undoubtedly due to the efforts of the medical staff no patients were on the list of casualties. The use of the sturdy type typhoon shelters and removal to the best protected tents and other structures accounted for their safety. 20 of the 30 main ward tents each 16 by 50 ft. were blown others and others loosened moorings. Beddings and supplies were destroyed and scattered over adjacent ground and even in the distant rice paddies. The personnel mess office, post office, property and accounting and storage tents were ~~wxx~~ wrecked. The laundry chow hall welfare galley surgery ships stores and other buildings were destroyed or severely damaged. All telephone and power lines were down or severed. All SQ ward tents were whipped off their ~~in~~ hill ~~byxxx~~ as if by a giant hand. All but two officers tents were smashed or ripped away. The chief petty ~~mfiz~~ officers quarters were raised and at least ten square personnel tents were blown away. This was

the picture that greeted the dawn of 10 October. A discouraging picture a picture of ~~jumbled~~ desolite catastrophe. A previously arranged four or five days supply of K rations assured all hands of adequate food for there was no facilities for preparing hot meals. The day was only a few hours old before reconstruction was underway. Every man on the unit not required for ward or necessary maintenance duties turned to to prepare the damage. Debris was cleaned up and hauled away sagging tents which had resisted the onslaught of the typhoon were straightened and strengthened. Emergency crews began throwing up shelters so that every man would be protected from further ~~exposure~~ exposure during the coming night. By early morning an emergency generator feeding ~~pump~~ power through hastily rigged lines was supplying electricity to the galley and surgery both of which had tarpolins ~~fix~~ slashed over their gates topside wounds. No help was available from outside sources and all over the island the tents had been erected similar to the station.

Immediate efforts aimed toward ~~evacuating~~ evacuation of some patients was attempted. Assistance was given by both army and navy units in the area in this important matter. Those who could be were discharged to duty so that all available man power could be utilized in the task of building again from the ruins. Within less than a week the hospital was back to virtually a full scale operational footing. The patient ~~cnt~~ census decreased daily as evacuations were virtually on all patients continued. Two weeks after the typhoon with the patients census down to nearly 100 word war received of a plans for impending decommissioning of the hospital as a separate command. Special Hospital No. 3 was to be United with special hospital no. 6 which was set up nearby. Special augmented hospital no. 3 was therefore decommissioned on 25 October 1945 after just 229 days in commission.

SPECIAL AUGMENTED HOSPITAL NO. 6 OKINAWA

Special augmented hospital no. 6 was placed in commission at the naval training and distribution center Shoemaker, California on 7 March 1945 with CAPT L. L. Adamkiewicz as commanding officer. On 14 March 1945 the crew was detached from Shoemaker and transferred to preembarkation barracks Treasure Island, California. On 19 March the entire complement was transferred to the navy medical supply depot Oakland where they boarded a transport the SEA FLASHER for duty outside the continental limits of the United States. On 21 March 1945 the ship arrived at Seattle, Washington and temporarily quartered ashore at the navy receiving barracks. On 25 March 1945 SEA FLASHER again got under way arriving at Honolulu ~~at~~ on 1 April 1945. On 3 April 1945 she again got under way and moored in Pearl Harbor.

On 9 April 1945 SEA FLASHER in convoy departed Pearl Harbor. On 18 April the convoy entered the harbor at Einwetok and was under way again on 23 April. On 27 April SEA FLASHER upped anchor at Ulysses where she remained 2 days. On 3 May 1945 the convoy was in the landing area off the west coast of Okinawa. While waiting to disembark at 1330 on 3 May an accidental shot from the USS NEW MEXICO struck near hatch no. 3 setting a life raft ~~afire~~ afire and 48 casualties including 3 immediate deaths resulted. After carrying for casualties and evacuating them to USS MERCY it was possible for the majority of the crew to disembark shortly after midnight. No equipment and supplies were immediately unloaded owing to complete blackouts as a result of air raids.

By 1800 on 4 May 1945 the medical staff was transported to operating base No. 1 where no shelter was available but all hands dug in for the night. On the next day work began in the construction of the hospital.

For the next 6 weeks construction including grading and provision of drainage continued under harassment of the elements and enemy sniper and bombi

attacks. The first patient was admitted to the hospital on 17 June 1945. By 3 July the hospital census had been increased to 63. A week later the census was 209. On 13 August the day before VE day the hospital census was 219. During the period of operation elements of fleet hospital no.s. 104 106 and 107 were housed in this unit. Despite the end of the shooting war the hospital census continued to average more than 200 patients despite daily discharges and air and ship evacuations. A typhoon which struck on 16 September caused only slight damage. Repairs are made promptly by hospital personnel and on 20 September the hospital census was 286.

Special augmented hospital no. 6 was located at Myo Sato in the middle portion of the island of Okinawa. With special augmented hospital no. 3 the hospital occupied a part of a track of land approximately 196 acres south and east of the junction of highway no. 16 and 24 which had been reserved as the future site of the fleet hospital no. 106. The fleet hospital was never set up owing to the conclusion of the war. The middle part of the island has more extensive flat areas than the northern part which is mountainous. The terrain of the hospital area was described as generally rolling country ~~xxx~~ broken by limestones scarps or hills. Toward the east the terrain descended rather abruptly into the coastal flats. Approximately 80% of this section of the island was under cultivation before the invasion. Most of the fields which varied from 30 to 50 foot squares were efficiently terraced to promote the best retention of moisture ~~in~~ in the soil. The land was devoted to yams, beans, peas, sugar cane, and rice. The lowest level of the hospital area was about 130 ft. above sea level and the highest 290 ft. Streams were scarce and although native wells and natural springs were numerous they were generally inadequate as ~~xxxx~~ source of potable water. The soil was yellowish brown it was deep and could be dug into readily. When wet it was ~~xxxx~~ sticky and ~~xx~~ drained very slowly. When dry it was dusty. Below

the soil was a deep layer of very hard gray blue clay always almost impervious to water except along the seams along various levels. Trees were found in small scattered woodland patches and in linear belts along the hillside. Houses and farm buildings were surrounded almost invariably by rows of trees and other dense intertwining vegetation. Evergreen oak and conifers predominated and there was considerable underbrush of fruit trees, shrubs, grasses and vines. Moderate temperatures prevailed with the monthly mean ~~new~~ temperature reported as ranging between 60 and 83 degrees fahrenheit. The maximum temperatures exceeded 90 during June minimum readings were in the low 40's. There was a general high humidity throughout the year. The rain fall was generally well distributed throughout the year with the heaviest fall amounting to as much as 10 inches in June and August. The total ~~xx~~ annual rainfall according to available literature was between 82 and 124 inches. Special augmented hospital no. 6 was disestablished on 15 December 1945. During this period ~~2x8~~ 2,369 patients were admitted.

Special Augmented Hospital No. 7

Commissioned 10 March 1945

Arrived in Okinawa on 14 July 1945.

Of the five Special Augmented Hospitals to arrive in Okinawa, only Numbers 3 and 6 actually received patients before the surrender of Japan.

Special Augmented Hosp. No. 7 saw its first patients in September 1945 and continued to care for them for several months after the war.

**OPERATING BEDS IN MEDICAL FACILITIES
DURING WORLD WAR II AT HEIGHT OF WAR (Overseas)**

<u>Facility</u>	<u># of Beds</u>
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Balboa, Canal Zone	314
Coco Solo, Canal Zone	350
Aiea Hieghts	5000
Pearl Harbor	
Trinidad, British West Indies	300

Base Hospitals

Base #1 Londonderry, England	300
Base #2	500
Base #3	1600
Base #4	350
Base #6	200
Base #9	200
Base #10	500
Base #11	300
Base #12	200
Base #14	400
Base #15	1100
Base #16	300
Base #17	1200
Base #18	2618
Base #19	1000
Base #20	200

Fleet Hospitals *#102 - Pearl Harbor*

<i>Fleet Hospital</i> <i>#103 - GUAM</i>	
Fleet Hospital #105	500
Fleet Hospital #106	500
Fleet Hospital #107	1000
Fleet Hospital #108	1750
Fleet Hospital #109	2000
Fleet Hospital #110	500
Fleet Hospital #111	500
Fleet Hospital #112	
(Russell Islands)	2000
Fleet Hospital #114	3000

World War II cont,

<u>Facility</u>	<u># of Beds</u>
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Special Augmented Hospital

Special Augmented Hospital #3	200
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Special Augmented Hospital #6	150
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Hospital Ships

USS Relief	500
USS Solace	500
USS Comfort	700
USS Hope	680
USS Mercy	600
USS Bountiful	500
USS Samaritan	600
USS Refuge	630
USS Haven	802
USS Benevolence	802
USS Tranquility	802
USS Consolation	802
USS Repose	750
USS Sanctuary	750
USS Rescue	792

TOTAL	9,640
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Combined Total for Pages 1 and 2: 38,672

OPERATING BEDS IN MEDICAL FACILITIES
DURING THE KOREAN CONFLICT 1951 - 1952

<u>Facility</u>	<u># of Beds</u>
Continental Naval Hospitals	26,200 (as of 30 June 52)
Infirmaries	2,800

Hospital Ships

USS Haven	802
USS Repose	750
USS Consolation	802

At the end of 1951
there were 4 noncontinental hospitals

OPERATING BEDS IN MEDICAL FACILITIES
DURING THE VIETNAM WAR 1969 (Overseas)

<u>Facility</u>	<u># of Beds</u>
NSA Da Nang	700

Marine Organic Support Facilities

1st Medical Battalion, Da Nang	240
1st Hospital Company, Da Nang	100
3rd Medical Battalion, Quang Tri	218

Field Hospitals for I Corps Tactical Zone

Da Nang	
Quang Tri	560
Dong Ha	

Hospital Ships

USS Repose	560
USS Sanctuary	560

Total	2938
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Navy Medical Support in Vietnam

1965	NSH Saigon	100 beds
1966	NSA Da Nang	400 beds
1969	NSA Da Nang	600 beds with temp. augment to 700
1970		

Marine Organic Support

Da Nang	1st Medical Battalion 240 beds
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	1st Hospital Company 100 beds
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Quang Tri	3rd Medical Battalion 218 beds
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Field Hospitals I Corps Tactical Zone

Da Nang	} 560 beds
Quang Tri	
Dong Ha	

Hospital Ships

Repose	560 beds
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Sanctuary	560 beds
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Medical Support in Vietnam

Hospital ships

Sanctuary and Repose

Amphibious ships

Medical battalions attached to Marine corps units

Da Nang Support Activity

Station Hospital Da Nang and NAVSUPPORT Activity Disp.
(White Elephant)

Support Detachments with attached dispensaries

Camp Pien Sha

Other facilities in Vietnam

Chu Lai
Phu Bai
Dong Ha
Qua Viet

Nav Hospital, Saigon (HSA Saigon)

NSA, Saigon

I Corps

1st Med Bat - Da Nang

1st Hosp Co.

3rd ~~med~~ Med Bat Quang Tri